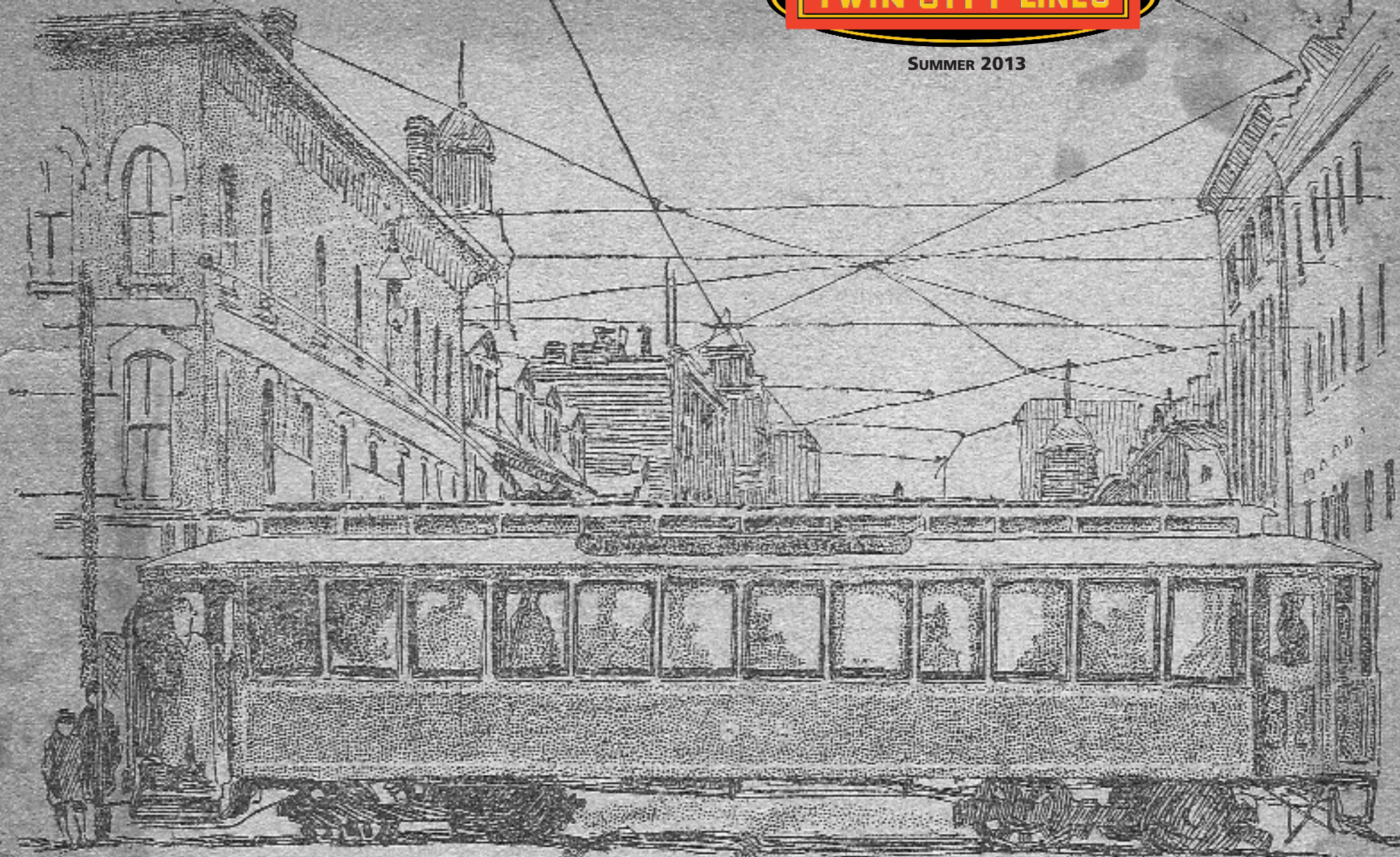


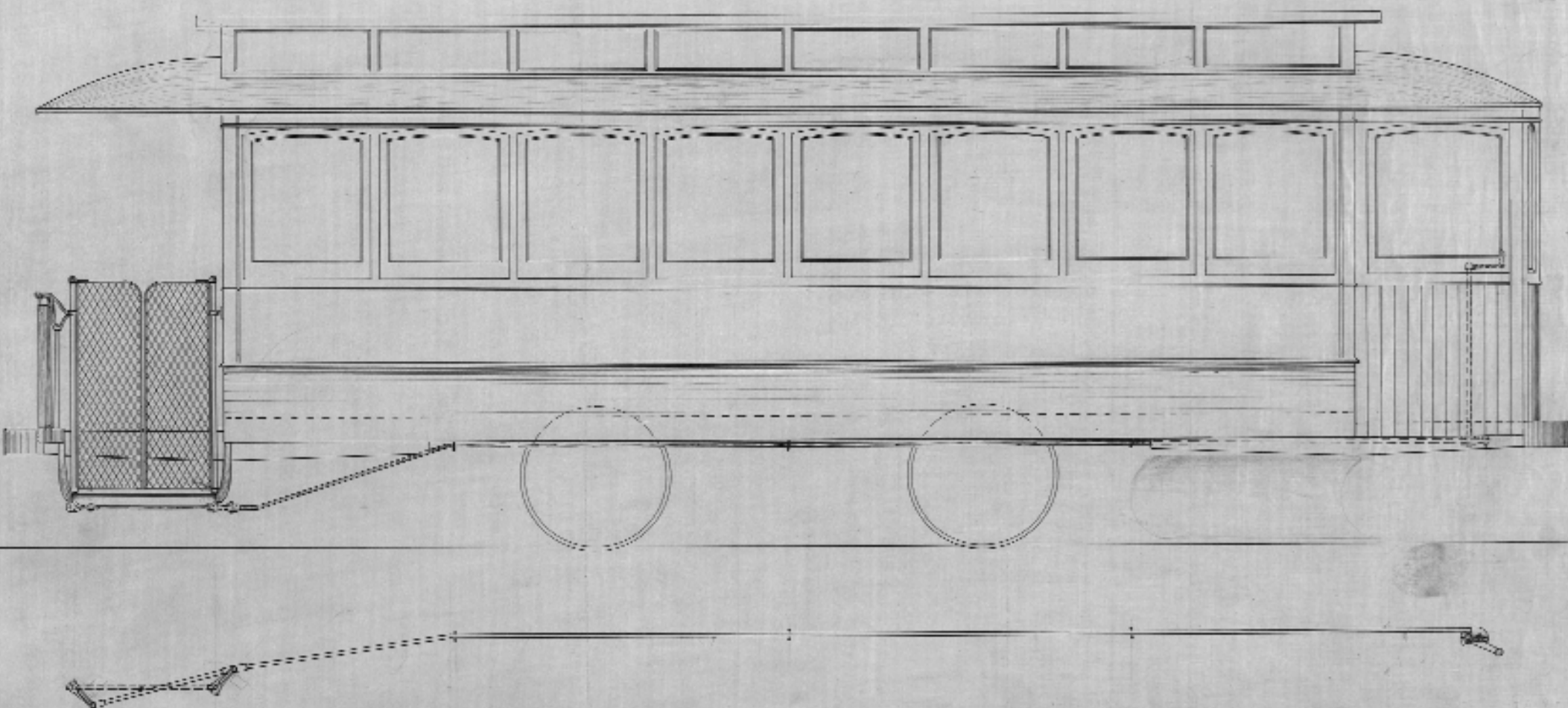
TWIN CITY LINES

SUMMER 2013



TWENTY-TWO FT. CAR with SAFETY GATE

E25 Dr. No. 8



11231

This issue tracks the early development of Twin Cities streetcars, as well as some that were planned, but never built. Front cover: This 1890s newspaper illustration shows car #619, one of 20 early double-truckers built by American Car Company in 1892 for University Avenue. They set the look for later TCRT-built cars. Above: An 1896 TCRT drawing showing a single trucker retrofitted with safety gates and an enclosed front platform.

TWIN CITY LINES

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The Streetcar Evolves

-Aaron Isaacs

It was 1889 when the Minneapolis Street Railway experimentally replaced horse cars on the 4th Avenue line with electric cars. The first replacements were simply motorized horse cars. In short order, TCRT and the rest of the streetcar industry had to climb a steep learning curve, modifying car design to the new realities of higher speed while accommodating an explosive growth in ridership. Within ten years, this on-street laboratory would drastically change what a streetcar looked like and how it operated.

Recognizing the limits of animal horse power, horse cars were built as lightly as possible. Over time, they grew in size somewhat to accommodate increased ridership, but were still rather flimsy.

Beginning in 1887, the St. Paul City Railway began running cable cars on Selby Avenue. They resembled horsecars in size. There was no on-car power source. Cable cars gripped a moving underground steel cable. They were faster, 8-10 miles per hour versus about 5-6 mph for horse cars. More importantly, cable cars typically hauled a trailer, thereby doubling their capacity. The trailer required a separate conductor, so cable trailer trains ran with a crew of three. It should be noted that cable trailers were more substantial than horsecars which later became trailers behind electric cars.

Having seen them used in St. Paul since 1887, the Minneapolis city council mandated a cable car system in 1889. The materials were purchased and laid

A two-car Selby Avenue cable train, built in 1887. Note the cable grip levers sticking up above the seats in the first car. The trailer was unpowered.

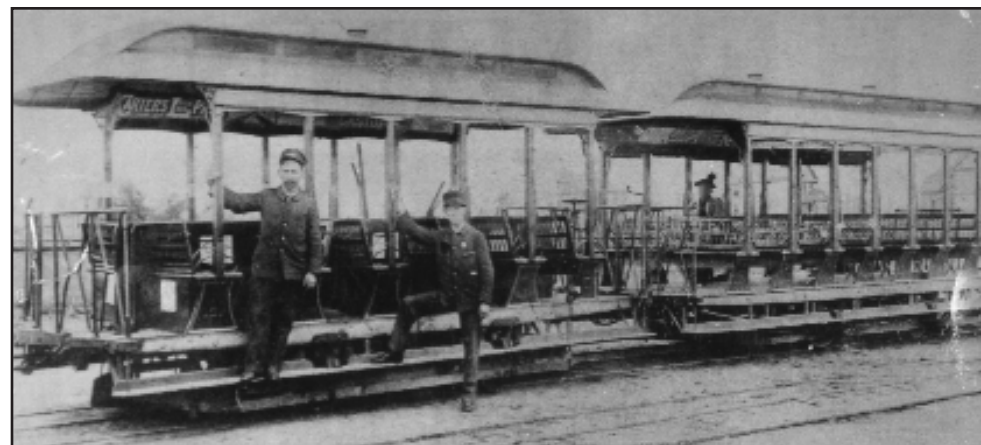


Horsecars were beautifully decorated, but lightly built. This is a builder's photo of Minneapolis car #137, taken at the John Stephenson factory in 1885.

out for construction to begin. Contemporary newspaper accounts show no uncertainty about the cable cars, until Lowry suddenly says he would like to test electrics on 4th Avenue S. The test, conducted in the middle of winter 1889-1890, was successful, made permanent, and Lowry was able at the eleventh hour to convince the city council to change technologies. St. Paul was interested in

electrics at an earlier date and the city's first line on Grand Avenue opened in February 1890. From then on the only question was how long it would take to convert everything to electricity, including the steam powered Motor Line in Minneapolis.

There was immense cost to convert an entire transit system from horse to electric. The Minneapolis side of the system had to be re-laid from narrow



gauge to standard gauge. St. Paul horse cars were already standard gauge. The Sprague electric traction patents were less than three years old, so transit systems and manufacturers were still trying to figure out how to build a good streetcar. Early ones were prone to motor failures and other mysterious electrical ailments. TCRT was almost a decade away from deciding to build its own cars, so it bought new ones from commercial builders and reused as many horse cars and Motor Line steam trailers as possible.

The electric cars changed the game in several ways, some of which were unexpected. On decent track, they were capable of speeds of 30 miles per hour or more. Aside from the occasional galloping horse, nothing approaching this velocity had ever been seen on a public street before. Concerns were expressed for public safety, and some saw the unprecedented speeds as contrary to the laws of god and nature.

Higher speeds quickly revealed the limits of streetcar and track design. Horse car track was lightly constructed. Derailments were fairly common, but seldom resulted in injury or damage because they occurred at walking speed. Assisted by a couple of passengers, the crew could easily rerail the car and continue on. An electric car on poor track at higher speeds was a derailment waiting to happen, but with more dire consequences. Single truck streetcars, even of more modern design, are notorious for "bucking" at higher speeds. They rock forward and backward and it's not unusual for wheels to lift off the rail.

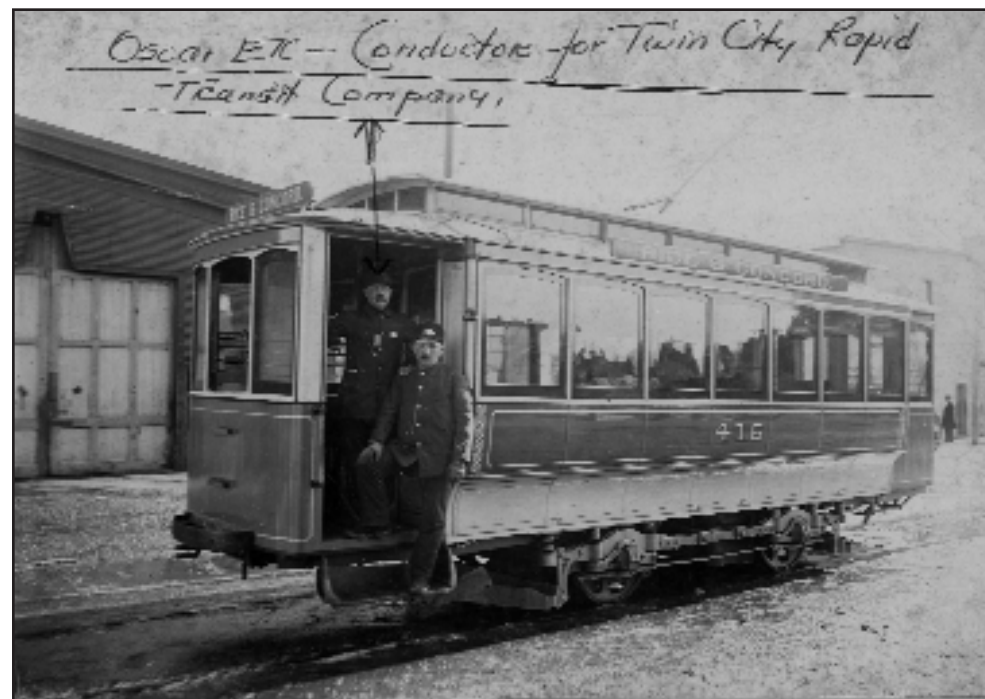
Although improved car design was needed, the first step was to improve the track. This from the Electric Railway Journal in 1897. "The Twin City Rapid Transit company is the first street railway corporation in America to put in what has been aptly termed by the technical

journals 'A Permanent Track'. New systems of construction became imperative with the introduction of electric power. For a few years most work was experimental. It was obvious that a heavier track was necessary to carry the increased weight of the electric motors, but the best means of arriving at the right kind of track was an open problem. The results of careful study brought the conclusion that the ideal track at any cost was the cheapest in the long run. The smoothest track will cause the least wear and tear on the motors and car bodies; to be smooth under the great weight of the cars it must be exceedingly substantial, and being substantial and unyielding, it will wear better than a track that is warped and twisted with every load that passes over it."

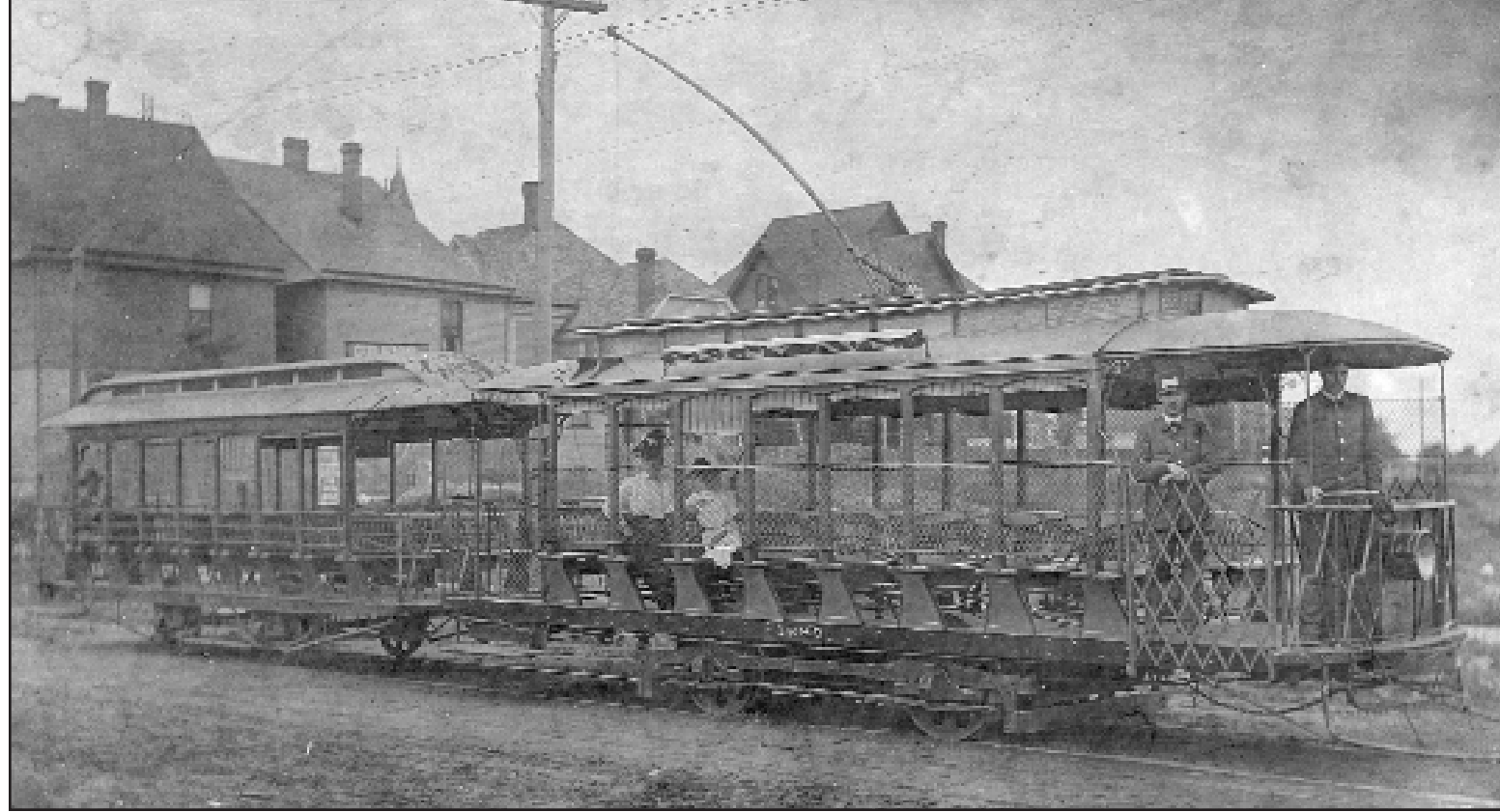
TCRT also quickly discovered that higher speeds had created a liability problem no one had foreseen. During the horsecar era, it was accepted practice to stop the car only for women, children, the elderly and the infirm. Able-bodied men and boys swung on and off the cars as they rolled along. Besides saving time, this practice conserved the horses' limited energy, since starting a loaded car required considerably more effort than keeping it moving.

No one thought to change this practice and now people were attempting to board and alight at much higher speeds. The result was numerous injuries, including some amputations. TCRT began installing

Top: Until about 1895, motormen were unprotected from wind chill on the front platform. Note the full length fur coat. H. B. Herington photo, Orange Empire Railway Museum collection.
Bottom: A St. Paul car after installation of vestibules. H. B. Herington photo.



A typical 1890s train of open motor car and ex-horsecar trailer lays over at Prior and University, the end of the Merriam Park line.



wire gates on its platforms and requiring motormen to make a full stop for every passenger. From a Minneapolis Tribune story, "The public is gradually becoming accustomed to the safety gates on the street cars. They are a protection against the man who habitually jumps on and off a car, against the drunken man who would as soon get off in the middle of the block, against the danger of being jostled off a crowded platform, and they force motoneers to come to a full stop at crossings, instead of merely slacking up for a male passenger in the expectation that he would jump on or off while the cars was moving."

Open cars required more drastic modification. The standard American open car was equipped with benches running the width of the car. Running boards ran the length of the car on both sides, so passengers could board or alight anywhere. TCRT removed the running boards in 1896, cut an aisle down the middle of the seats, placed wire screens at the ends of the seats, and limited boarding to the rear platform, which was protected by gates. Seating capacity was sacrificed for improved safety.

Tribune Oct. 16, 1902

MINNEAPOLIS CAR GATE

"The Twin City Rapid Transit Company has done more to safeguard passengers against the danger of accidents than any other street railway company in the country. The company has its own car works and builds all its own cars. A few years ago the company officials were complaining that the payments on account of personal injuries were too burdensome. A very large proportion of the accidents, it was found upon investigation, resulted

from passengers getting on and off the cars while in motion. To lessen the number of such accidents an employee of the company devised a mechanism to prevent passengers from getting on or off until the car is brought to a stop. The device consists of a gate at the rear platform that is controlled by the motorman. Just as the car stops, and not before, the motorman swings open the gate and passengers are permitted to alight. Likewise the gate is closed by the motorman the instant before the current is turned on to start the cars. All cars with open sides and running footboards have been abandoned, and where open summer cars are used there is a wire screen on each side.

The introduction of these safety devices brought about at once a marked reduction in the payments on account of injuries. The payment of account of injuries and damages amounted in 1894 to over \$106,000. The next year, when the "Minneapolis gate" was put in use the

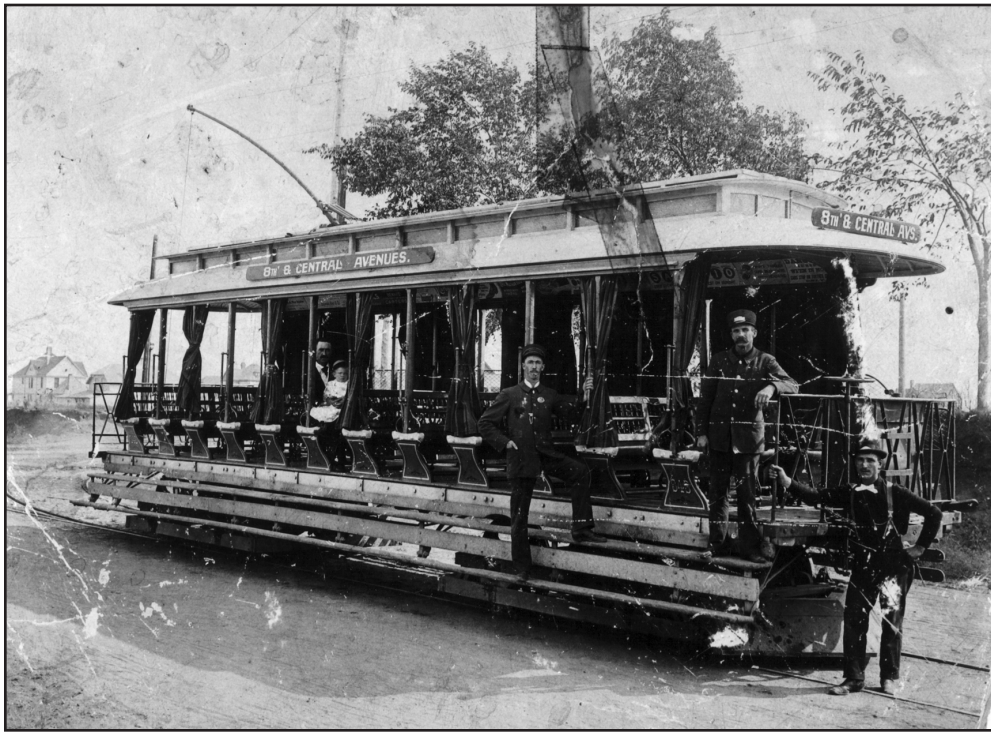
payments were reduced to \$80,000, and in 1898 they were as low as \$58,000. Last year (1901), when the traffic increased more than 50 per cent over 1894, the payments on account of injuries were still less than in 1894."

In 1894 wire screens were placed over the windows on the left side of the car. This was termed the "pole side" because at the time the overhead wire support poles were set in the center of the street between the tracks. Passengers had been leaning their arms out the windows and suffered injuries when passing poles and opposing streetcars.

Horse car drivers had always occupied the open front platform, and were exposed to all kinds of weather. The dramatic increase in electric car speed suddenly subjected them to unprecedented wind chills. It created miserable and often dangerous

working conditions. One motorman in St. Paul actually froze to death at the controls. The public demanded that something be done. The state legislature acted, passing a law in 1893 that required all streetcars to be retrofitted with enclosed vestibules to provide protection from the weather. The Panic of 1893 came along at the same time. TCRT fought against the bill, arguing that it would drive them out of business. It didn't, and became law. By 1895, they were installed on all the cars.

Upon electrification, TCRT converted numerous horse cars into trailers. While an expedient use of resources in the short term, trailers were unloved by both management and passengers. They required a second conductor. On runs where trailers were assigned only for one or two trips, there was an attempt to have



Double truck open cars, before and after the installation of safety gates. The running boards and open access to any seat were replaced by rear steps and a center aisle. The top photo is Minnesota Historical Society collection. The bottom, taken by TCRT, is at Snelling Station sometime after 1908. The open car has received air brakes.

a single conductor handle both cars by opening a walkway between them, but it's unclear if that was successful. The loose coupling to the power car created slack action that jolted the passengers with every start and stop, described in a newspaper article as "the constant jerking and jamming of two cars loosely coupled".

In 1901, a memo from a Duluth Street railway official stated that the new double truck cars "...will enable us to do away with the use of trailers. The

trailers are a fruitful cause of accidents, and no matter how careful motormen and conductors are, it seems to be impossible to prevent accidents when they are used."

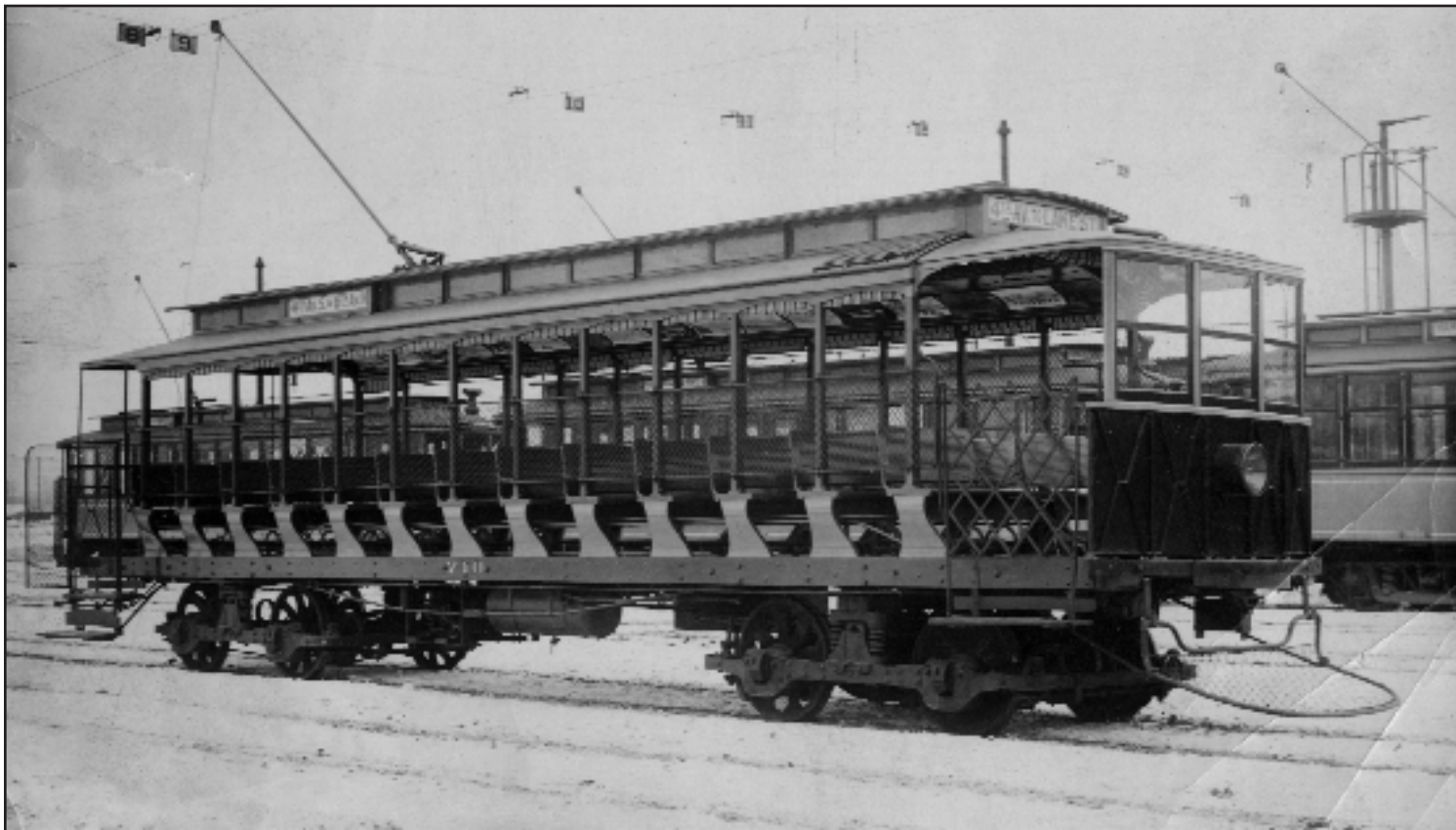
Single truck streetcars were a design carryover from horse cars and quite a few were indeed former horsecars. The double truck passenger car was standard railroad practice, and it wasn't long before double truck cars began to appear on street railways. TCRT built double truck open cars from old Motor Line trailers in 1891 and purchased others commercially.

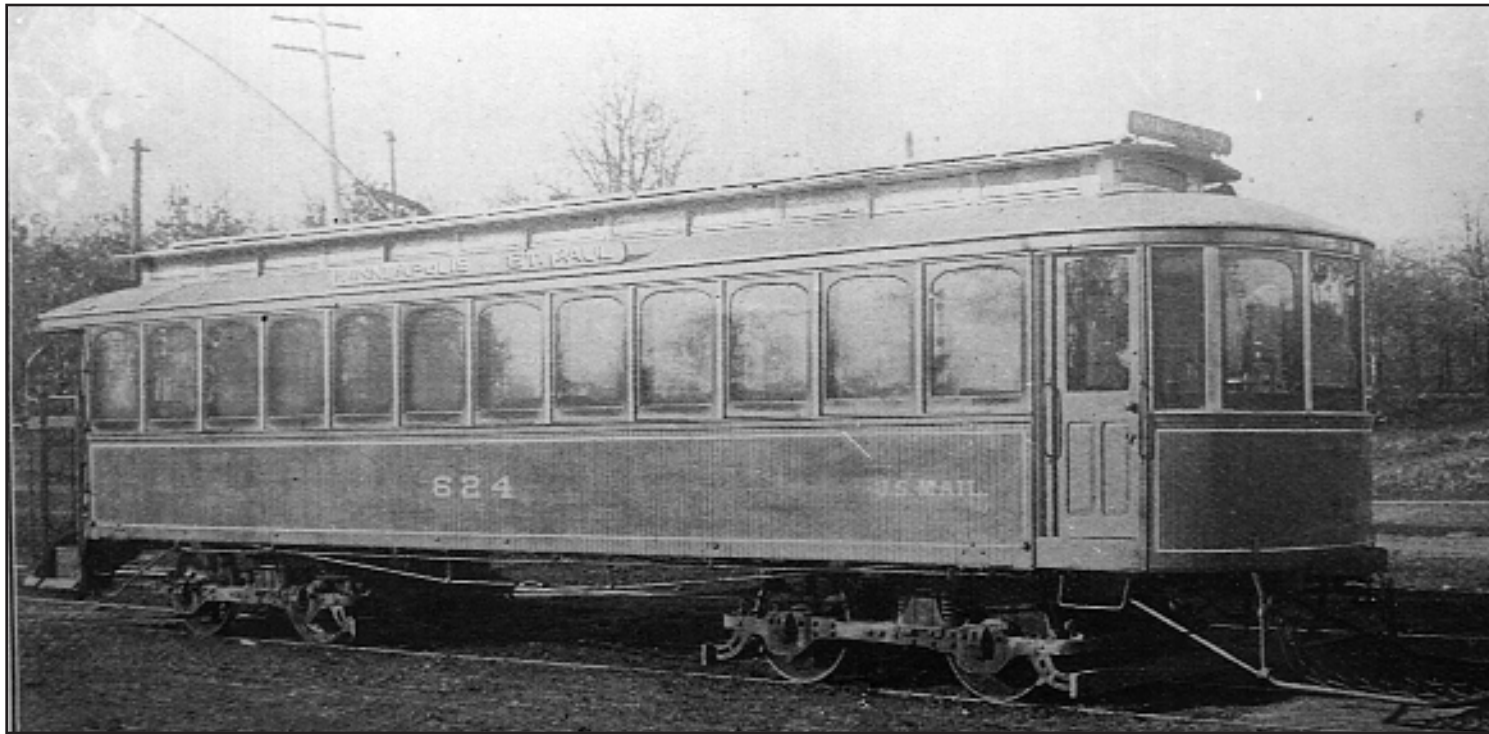
In 1892, TCRT purchased its first group of 20 enclosed, double truck cars, #607-626. 42 feet long, each car seated 43 passengers, more than a two-car trailer train.

The 600 series cars quickly revealed the superiority of the double-trucked design. The ride was much smoother, especially at higher speeds, with no more forward-backward lurching. A Duluth newspaper in 1900 compared the new TCRT-built double truckers with the old single truckers, saying with the new cars "there is practically none of that constant rocking". Another article noted "the great superiority of these (double truck) conveyances over the old cars, with their inefficient heating arrangements and their nerve-racking jolting and teetering along the rails." Unlike the single truckers, in which all seats faced the center aisle, the 600s had forward facing seats, which the public found much more comfortable.

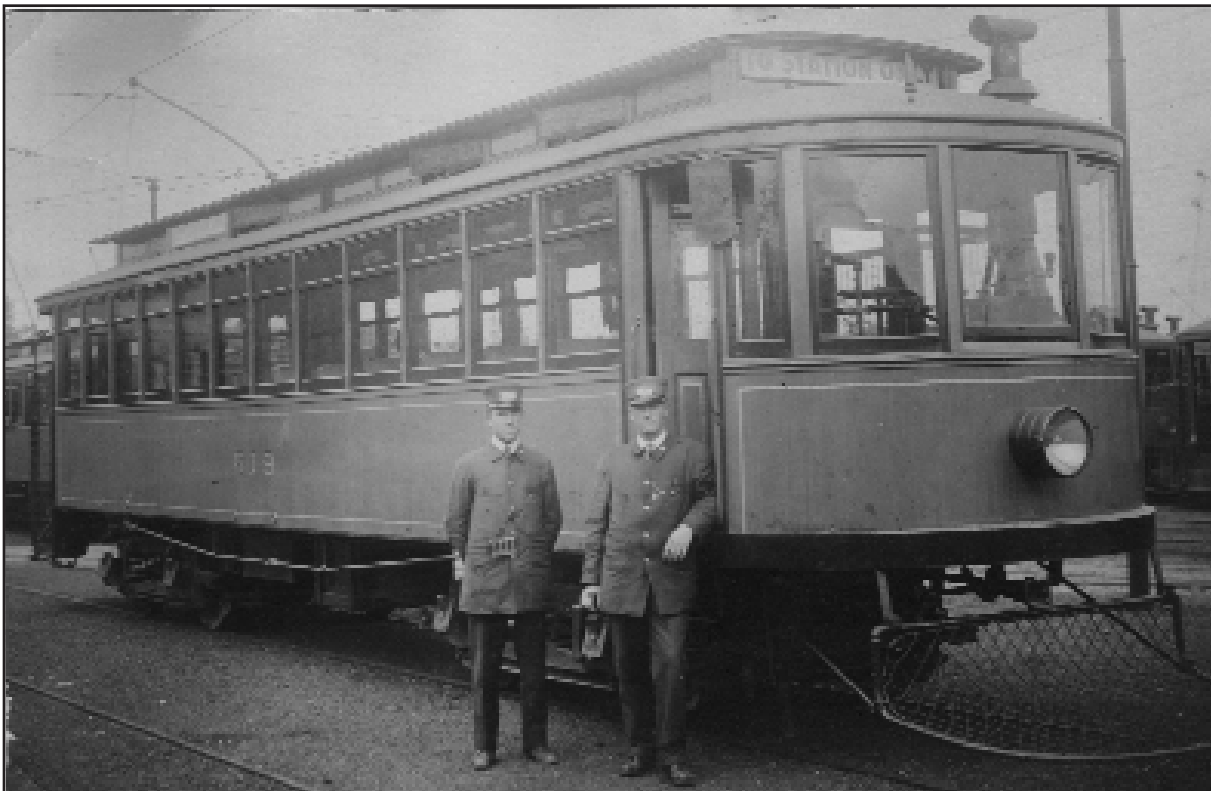
Although built by American Car Company, the 600s were built to a TCRT design. They established the basic TCRT look, with a rounded 5-window front platform and wire gates in the rear where all passengers boarded and alighted.

Fifty double truck open cars and one closed car were also delivered in 1892-93. TCRT had invested in hundreds of





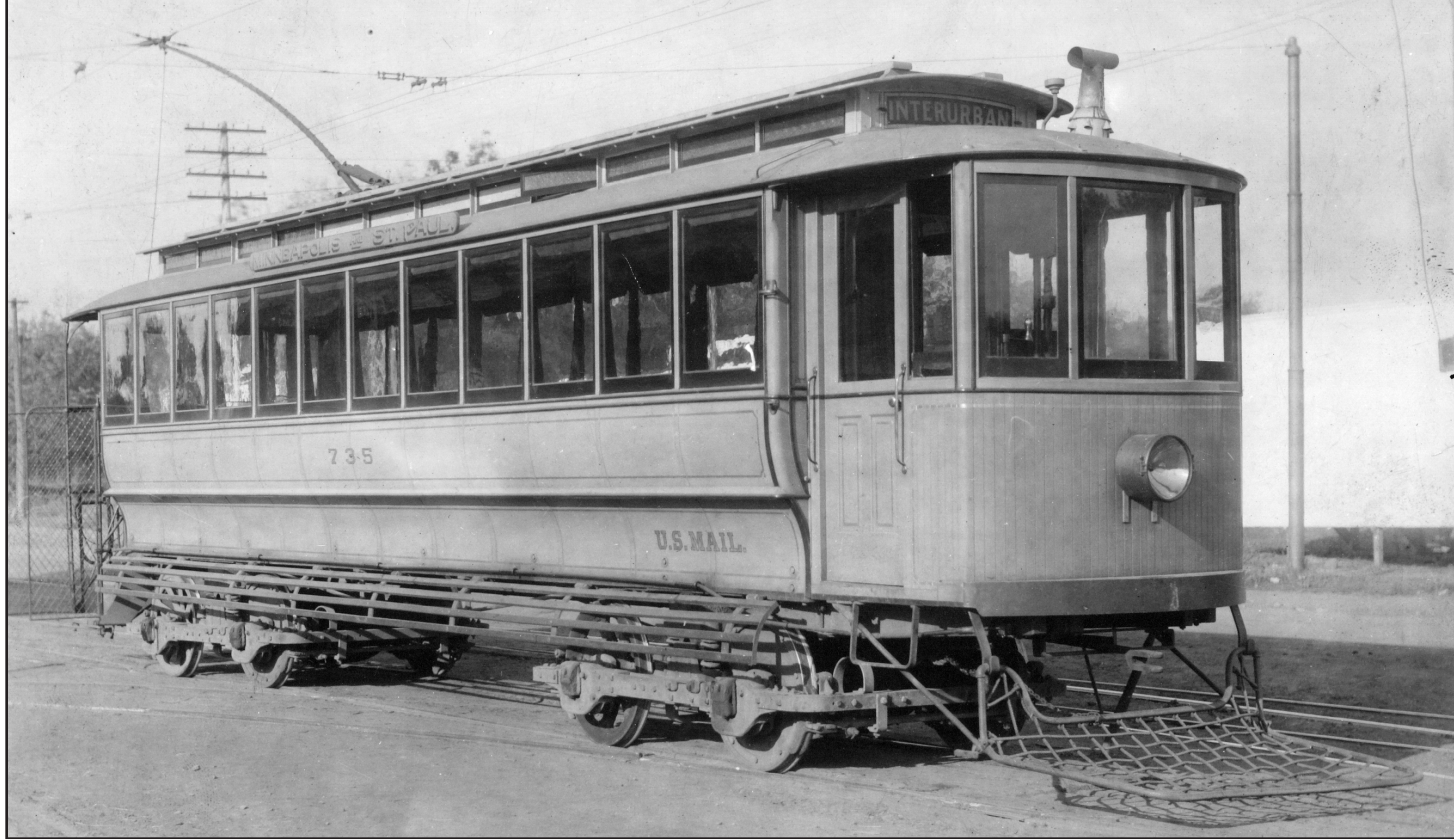
single truckers and couldn't afford a wholesale conversion so soon. However, attempts were made to improve them. A group of 68 16-foot former horse cars built by Jones Sons was lengthened by inserting an additional six feet in the middle. This made them large enough to eliminate the use of some trailers. A newspaper story adds detail, "The point to be gained by long motors is that when loaded they can make better time and 'take the rails' easier than short motors with a light load can pull a heavy trailer. The trailers, it is said, are a fearful drain on the power house and are expensive to operate, what with an extra conductor and wear and tear of the gearing." Evidence of the trailers' impact on power generation comes in a newspaper story. It reported that failure of a stationary steam engine at the power plant caused the company to temporarily run without trailers, causing overcrowding and many complaints.



The delivery of cars 607-626 by American Car Company in 1892 established the look of the later home-built cars. TCRT rebuilt some of them, replacing the archaic Bemis trucks, and otherwise upgrading them to match the rest of the fleet. They remained in service until 1914.

An experiment in 1896 rebuilt pairs of single truckers into one long double truck car. The result was #732-735, which for some unknown reason were labeled "windsplitters". They weighed quite a bit less than the 600s, but retained their old interiors with all seats facing the aisle. Assigned to the Minneapolis-St. Paul Interurban on University Avenue, according to newspaper accounts, they were not successful. One of them, #733, was reassigned to local service in Stillwater in 1906. No more such conversions were built and all were scrapped in 1911.

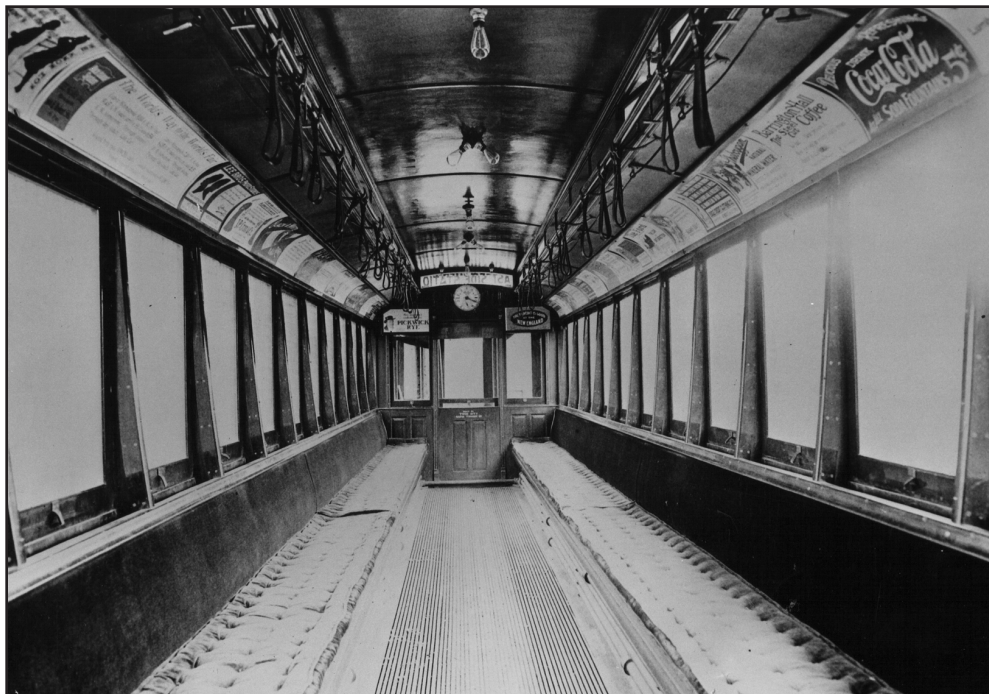
By the mid-1890s TCRT had decided that the future lay in double truck cars, and not just those of any commercial carbuilder. Minnesota's harsh winters required large heavily built cars that could better handle snow. Furthermore, these cars featured a "semi-convertible" design that could be fully



enclosed in winter but with large open windows for summer operation.

A major side benefit of the homebuilt cars is that they would free TCRT from having to maintain a separate fleet of summer open cars, an initial requirement of the city franchises. Besides the obvious expense of two fleets, deploying the open cars too early or keeping them in service too late in the year risked running them in cold or rainy weather. The open cars received trucks from winter cars each spring and the change-out was expensive and time consuming. The new TCRT-built cars could be adapted to any weather condition in a couple of minutes.

The decision was made to manufacture streetcars at the 31st Street Station. The facility consisted of the 1886 Motor Line roundhouse, which had been converted to a general repair shop for the system, and an 1892 carhouse. To that was added in 1898 an erecting hall with the capacity of eight



In 1896 TCRT spliced four pairs of single truckers together to create large double truck streetcars. They retained their aisle-facing seats. The experiment was not repeated. The table below shows the phase-out of trailer trains and single truckers.

Car Miles by Car Type

Year	Single truck	Double truck	Trailer	Total	Double truck %
1900	6,407,504	4,961,705	2,161,620	13,530,829	36.7%
1901	4,497,536	7,035,316	1,362,681	12,895,533	54.6%
1902	3,000,656	9,087,966	856,489	12,945,111	70.2%
1903	2,173,294	10,930,466	509,176	13,612,936	80.3%
1904	1,430,306	12,297,341	265,895	13,993,542	87.9%
1905	977,641	14,097,048	61,330	15,136,019	93.1%
1906	748,019	16,885,065	41,185	17,674,269	95.5%
1907	426,563	19,760,795		20,187,358	97.9%
1908	297,060	21,386,829		21,683,889	98.6%
1909	196,414	22,226,699		22,423,113	99.1%
1910	136,904	24,092,106		24,229,010	99.4%
1911	45,108	25,374,942		25,420,050	99.8%
1912	10,305	27,281,697		27,292,002	100.0%

TCRT goes yellow

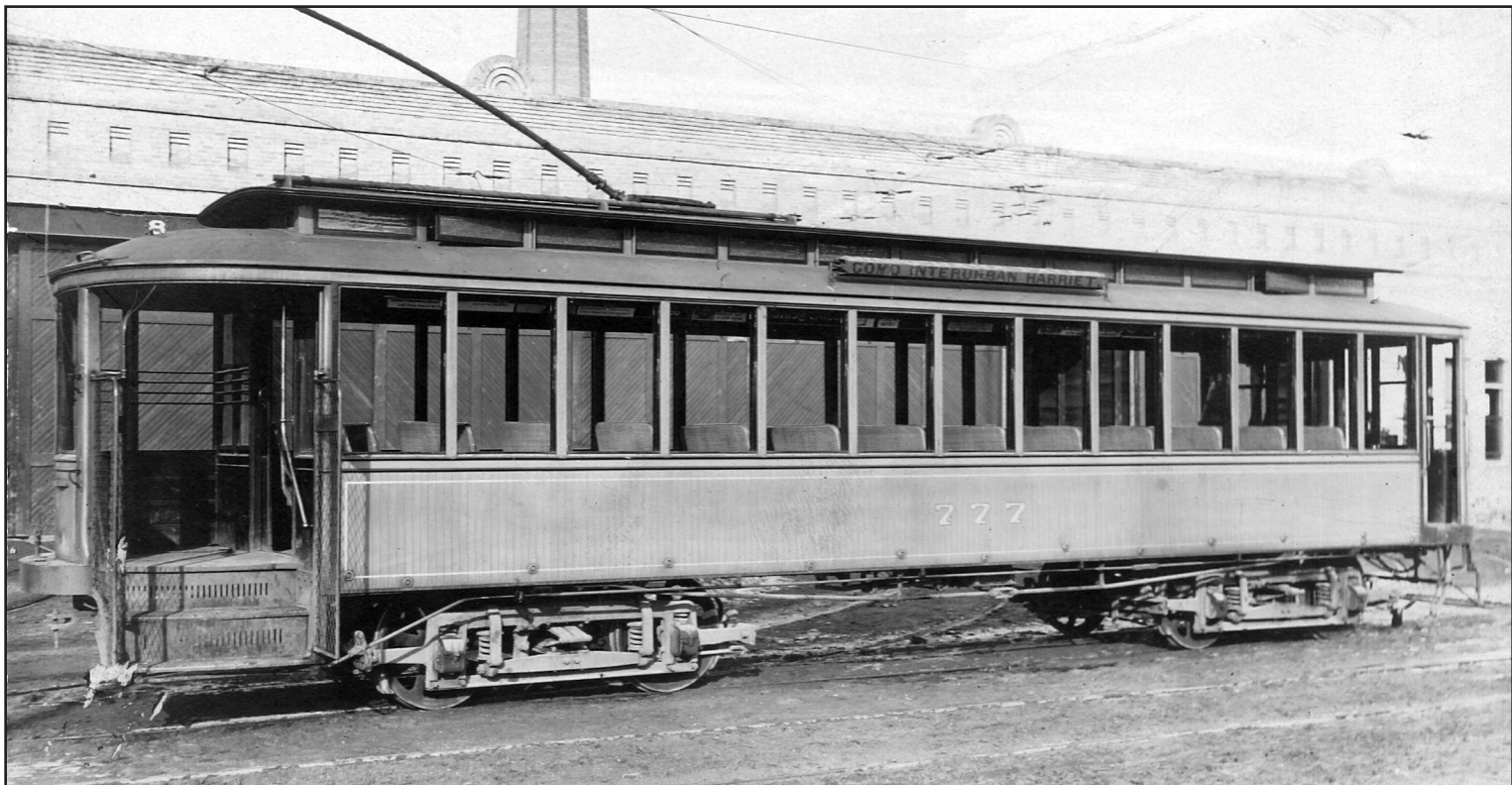
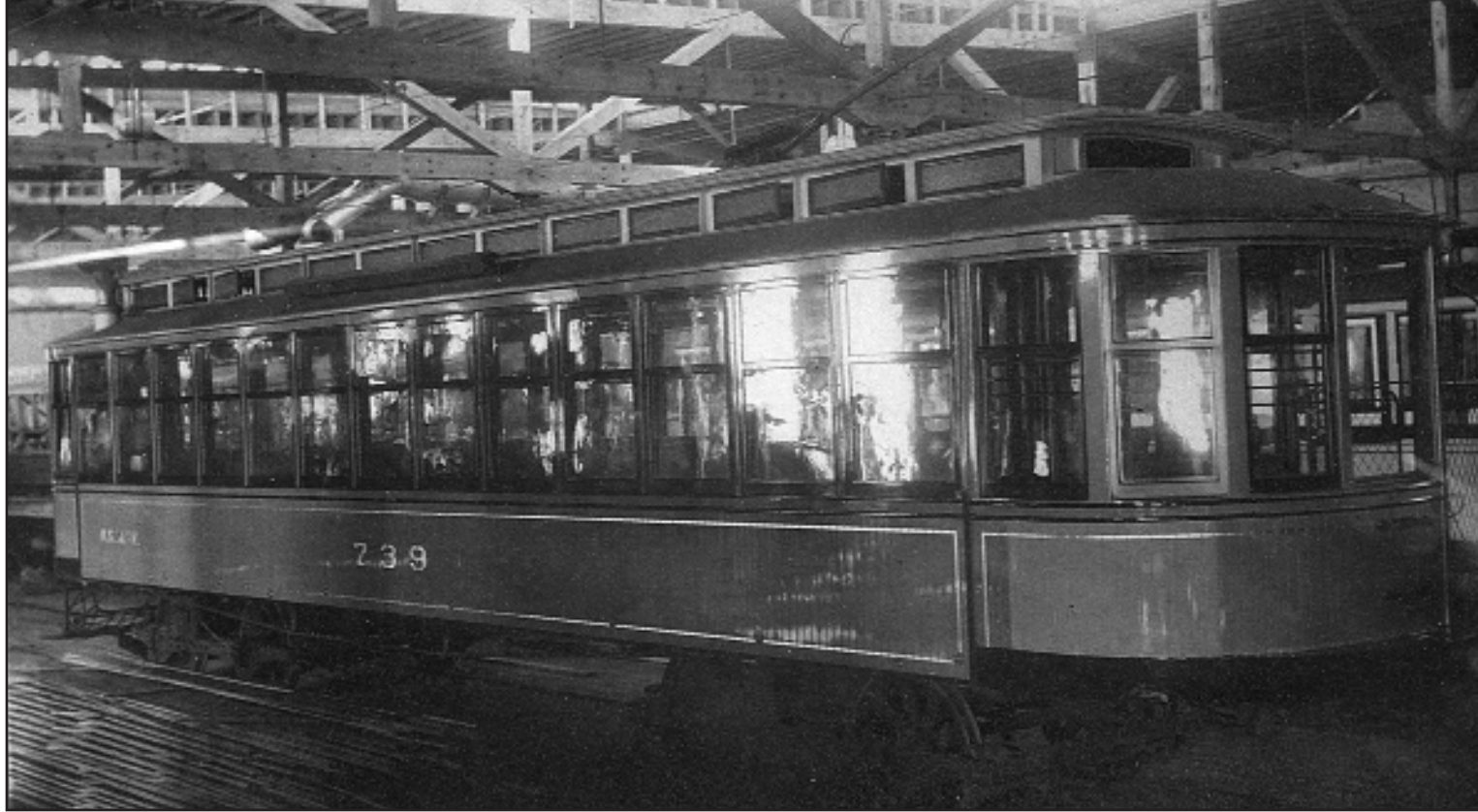
From an 1896 newspaper story

"The brand-new lemon colored suits in which some of the street cars are beginning to make their appearance is attracting much attention. At the street railway headquarters it was learned that the work of painting all the cars, both in Minneapolis and St. Paul, is being pushed as rapidly as possible. About 15 cars per week are turned out of the shops, resplendent in their new coats of lemon, trimmed with green, bronze and silver. The choice of color is said to have been made by C. G. Goodrich, the vice-president of the company." The previous color scheme is described as "a brilliant orange and all the metal work is painted black, instead of the brass finish".

cars per month.

The shop's first product in May 1898, was a sumptuously appointed private car for TCRT President Tom Lowry . Two prototype cars, #737 and 738, followed. After testing, full scale production began in September 1898. By 1905, 417 of the big new cars were on the street. By replacing motor-trailer trains with double truckers, the passenger carrying capacity of the fleet increased even though the number of streetcars declined for a few years. TCRT saved money because each trailer eliminated meant one less conductor on the payroll

Mileage by single truckers hauling



Above right: The first of the production homebuilt cars glistens inside 31st Street Shops in 1898.

Below right: The new cars were designed to be adaptable to both summer and winter weather, thereby replacing the separate open car fleet. Note that the upper sash have been removed, probably to demonstrate that.

trailers dropped, as shown in the table, and the last trailer ran in 1906. After 1905, a dozen single truckers were rebuilt for double-ended operation and were retained for use on short shuttle runs. By 1912, all were gone. Surprisingly, the double truck open cars remained in service and 36 of them received air brakes in 1908. However, the latest photo we have of them in service is at the State Fair in about 1906. All were scrapped in 1913.

TCRT continued to build its standard wood cars through 1917. The design was continually improved. Air brakes replaced hand brakes in 1905. That same year steel replaced wood for underframes. The primitive early Bemis trucks were replaced first by Brill, Baldwin and later by home-built trucks. Wood destination signs on the roof were replaced by hand-crank canvas roll signs.

Motors grew more powerful. Over time, excess weight was removed from the car design. For example, cars 992-1041 built in 1904 weighed 47,300 pounds. The Electric Railway Journal in 1913 described how weight was reduced.

"The lightening process has been carried on in all parts of the car and equipment. Wheels were reduced to 425 lb. for the 34-inch size. Axles have been brought down to a minimum safe size with allowance for wear. A 2-inch hole from end to end eliminates 62 lb. of useless weight. Brake rigging and trucks have been lightened by the use of better steel and forgings, thus permitting smaller parts to be used. The greatest saving here was by doing more machine work on castings. These have to be made larger than necessary for strength on account of foundry limitations, and 25 percent or more can be machined off in many cases without danger. It was found also that steel bolsters could not be cast straight and uniform. These were therefore planed off with a savings of 150 lb. All

parts of the bolster were at the same time made perfectly true. In the body all woodwork was made 1/16 inch thinner, and the steel underframes were lightened to the limit of safety. Even the grab-handles on the seat backs were trimmed down."

The last group of cars built in 1917 weighed 41,700 pounds, 5600 pounds (12 percent) less than in 1904. Despite these incremental changes, TCRT had settled on the car design that would serve it for the rest of the streetcar era. The initial two decades of experimentation were over.

Designed, but never built

-Aaron Isaacs

Several years ago Frank Sandberg donated six heavy document tubes filled with original TCRT car plans, drawn on vellum. They sat semi-forgotten in a corner of the carbarn until last winter, when I put together another group of photos and other images for scanning and posting on the Minnesota Reflections website. Shop

foreman John Prestholdt reminded me that we had the drawings (I had forgotten about them) and urged that they be included in the scan project.

As I unrolled them to do the cataloguing, one surprise after another appeared. Here was the experimental double-decker #1145, along with numerous detailed drawings of its components and details. The same was true for the various lightweight cars built for local use, and by licensee Lightweight Noiseless Car Company for other cities. Most of the work cars and plows were rendered in exquisite detail, on seven-foot long vellum sheets. Among them was the pair of mysterious and short-lived thermite welding cars, which appear in only two known photos and whose inner workings had been unclear.

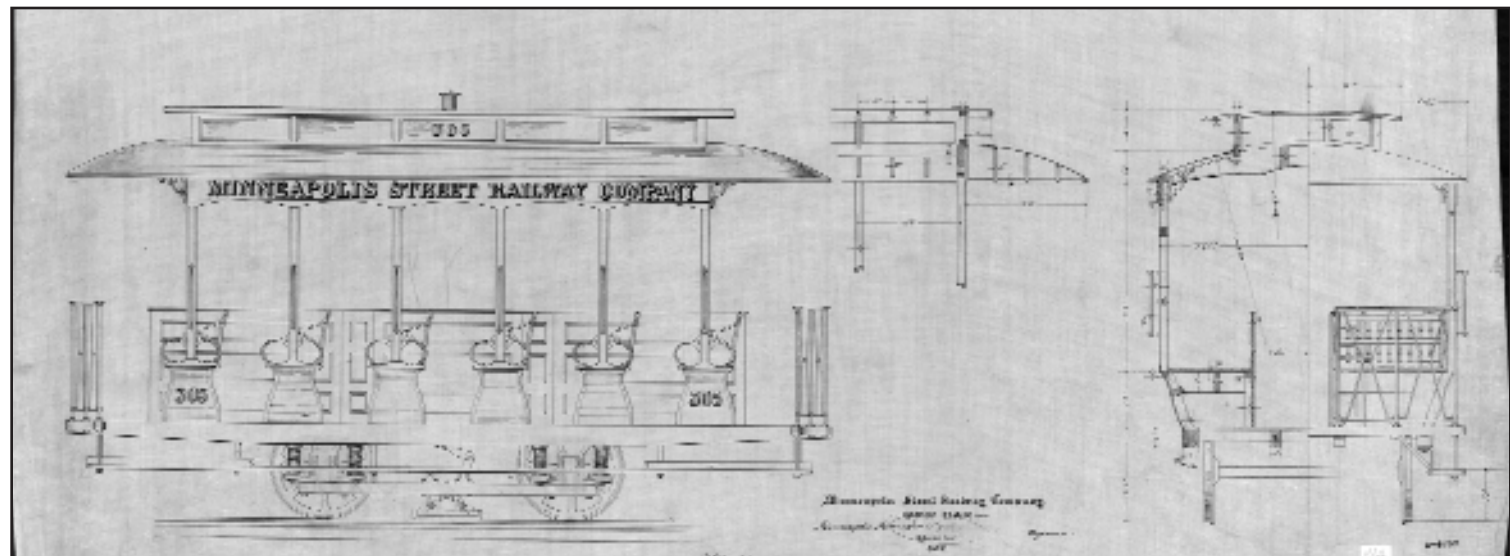
Most intriguing, however, were drawings of streetcars, and one boat, that were never built. The oldest is a Minneapolis cable car from 1889. We're talking the same technology as the famous San Francisco cable cars, an

unpowered vehicle that reaches into a slot between the rails to grasp a continuous wire cable powered by a stationary steam engine. St. Paul had opened its first cable line in 1886. Enormously expensive to build and maintain, cable cars nonetheless did away with horses and traveled twice as fast, 10 mph. Their invention preceded practical electrification by about ten years, and many were built across the country.

Minneapolis cable car

Once St. Paul had cable cars, the Minneapolis city council wanted them as well and started pressuring Thomas Lowry. Lowry eventually agreed to replace most of the horsecar system with cable, and issued bonds to pay for the huge upfront expense. The track components were purchased and in late 1889 were distributed along the intended routes in anticipation of construction the following spring.

The construction never happened. Lowry had been keeping a watchful



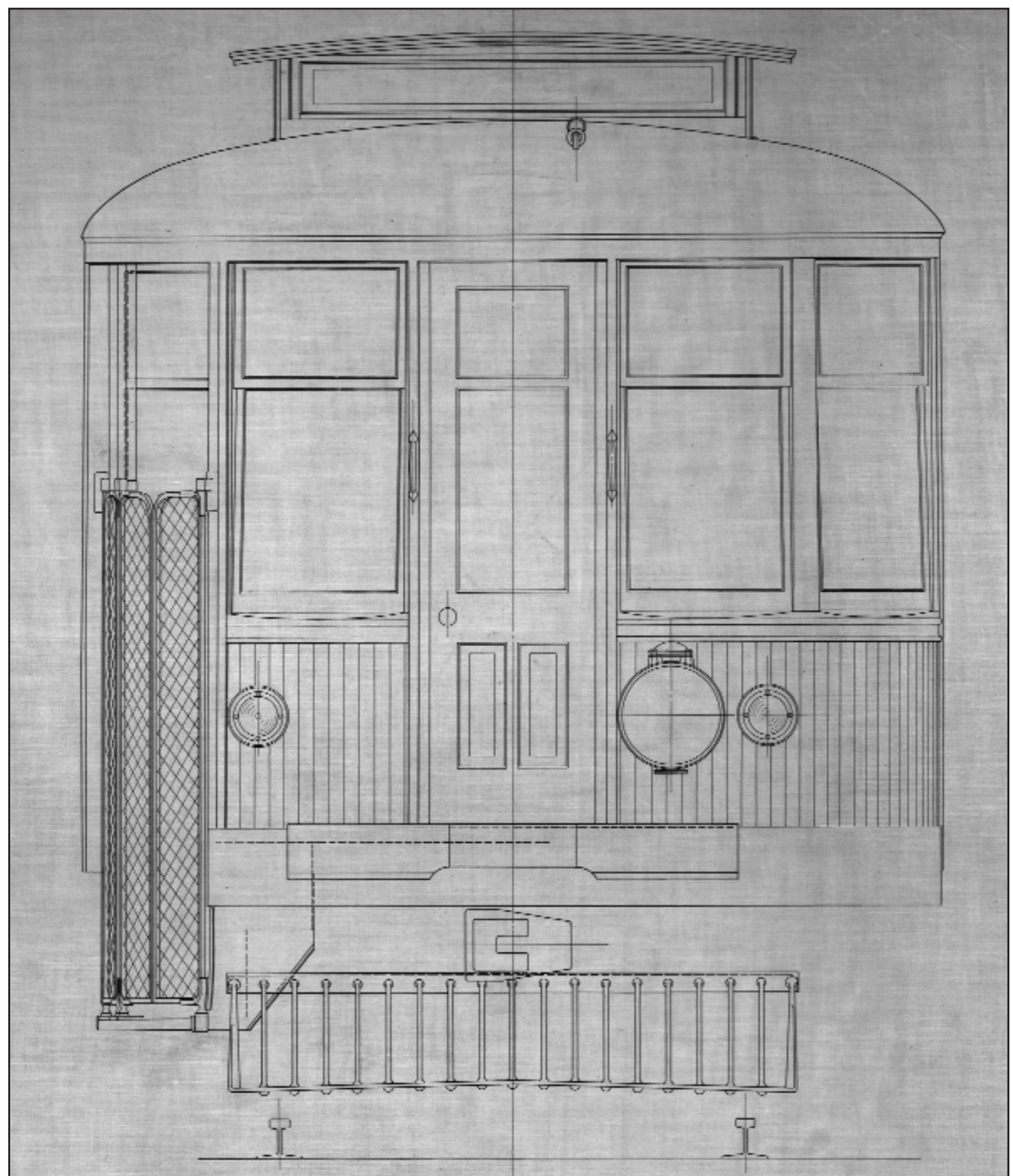
eye on the Richmond, Virginia, electric line, the first to adopt the patents of Frank Sprague that quickly became the industry standard. The Richmond system opened the previous year and unlike several competing patents, it was reliable. Lowry asked the city to permit a test electrification of the 4th Avenue S. line, which opened for service in December 1889. Despite the challenge of winter weather, the new electrics were successful. Here was a much cheaper technology that offered triple the speed of cable. The first electric line on Grand Avenue in St. Paul opened a month later and that was it. Minneapolis cable cars were doomed before they were ever built, and only this drawing remains of the cars that were never built. TCRT spent the next 30 years paying off the cable bonds.

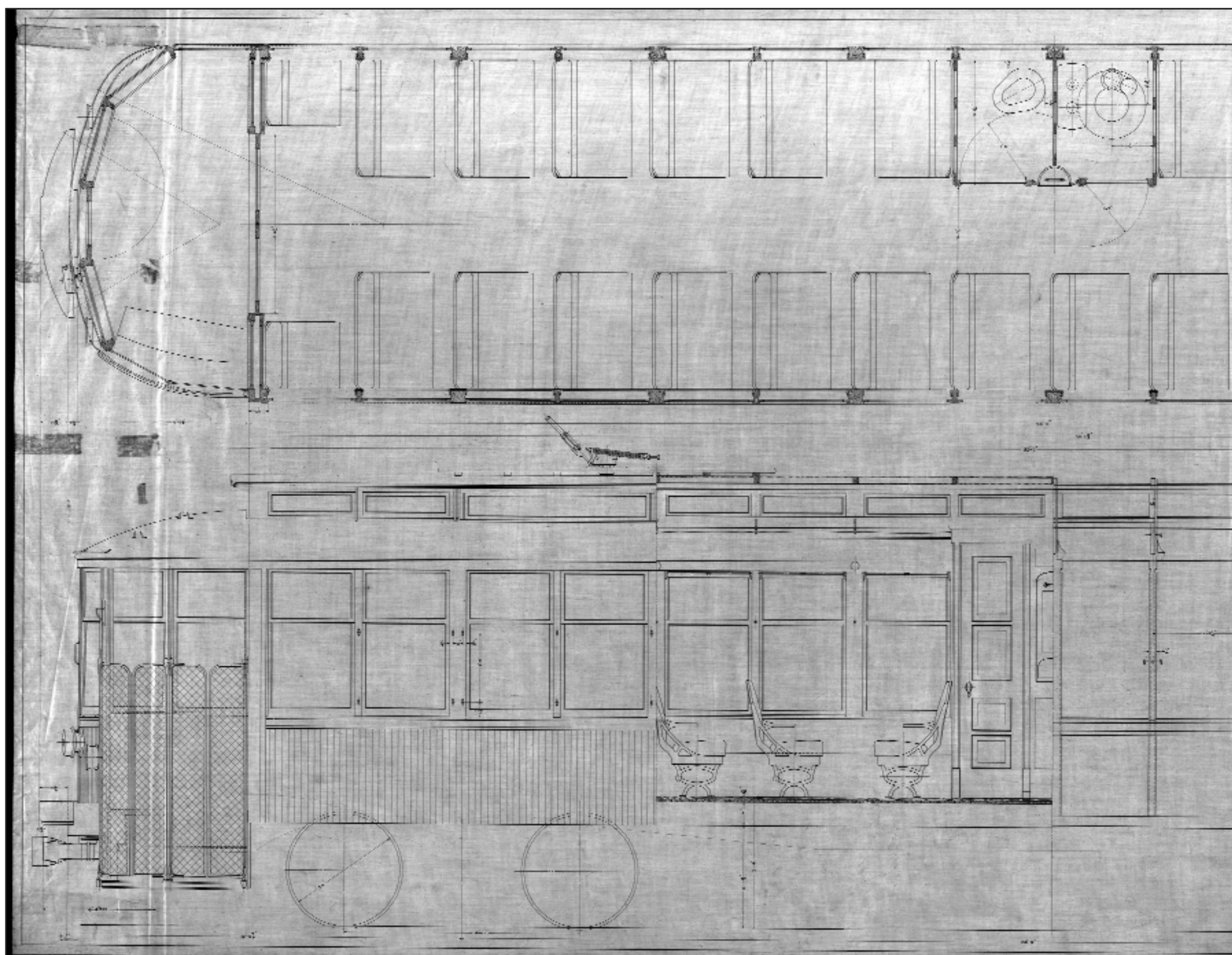
Lake Minnetonka interurban

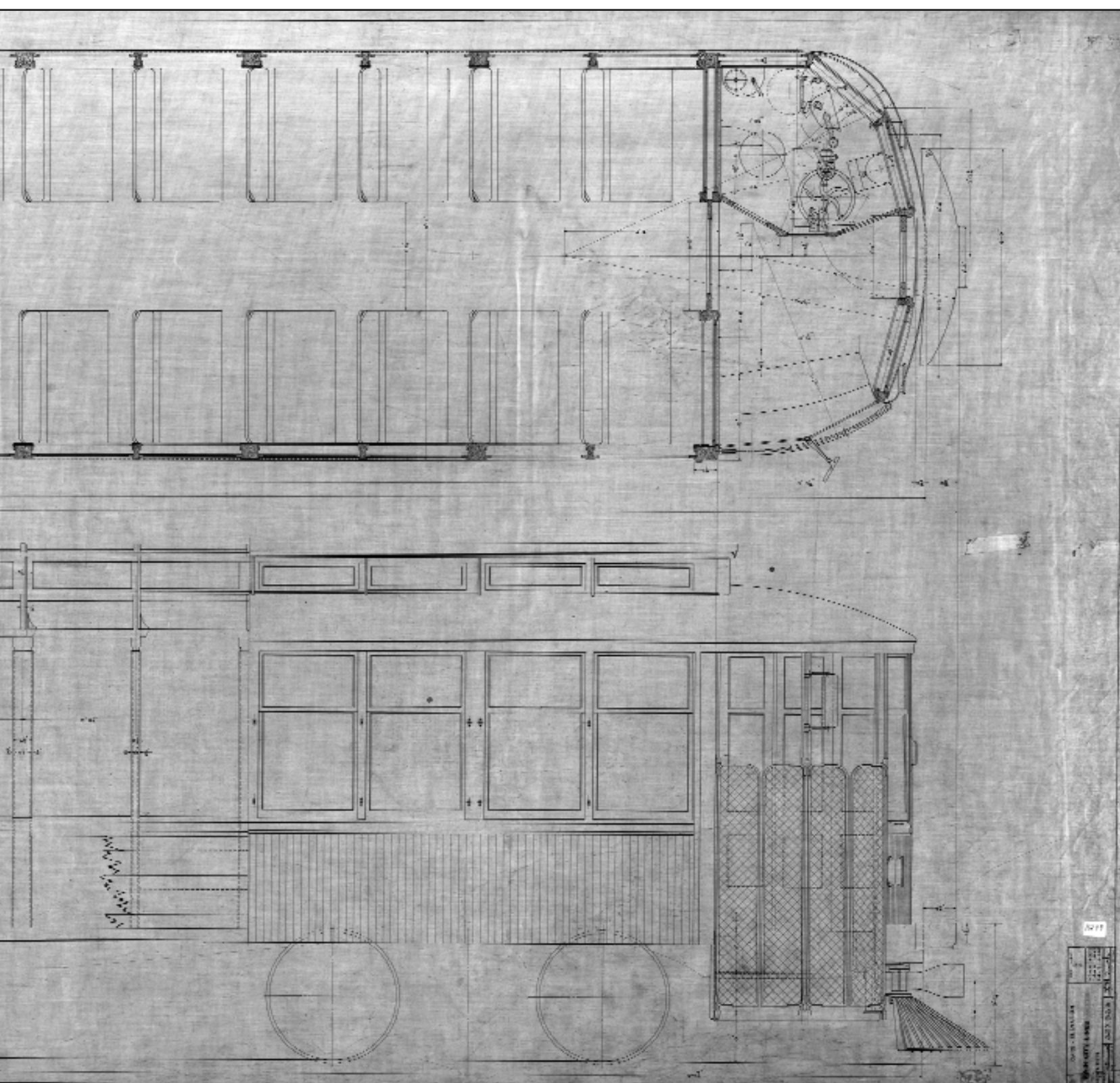
With the 1899 opening of the line to Stillwater, and the 1905 construction to Lake Minnetonka, TCRT found itself in the interurban business. After 1900, interurban electric railways needed cars that were bigger, faster and better appointed than regular streetcars. TCRT responded with a souped-up group of 10 cars that were almost identical to its standard streetcars but featured larger motors and all seats facing forward. They were joined by six more in 1907.

Still more were needed, and in 1909 TCRT flirted with a stretched version of its normal car (51 feet versus 46), designed for operation in multi-car trains. They were even planned to have train doors in the car ends, permitting movement between cars.

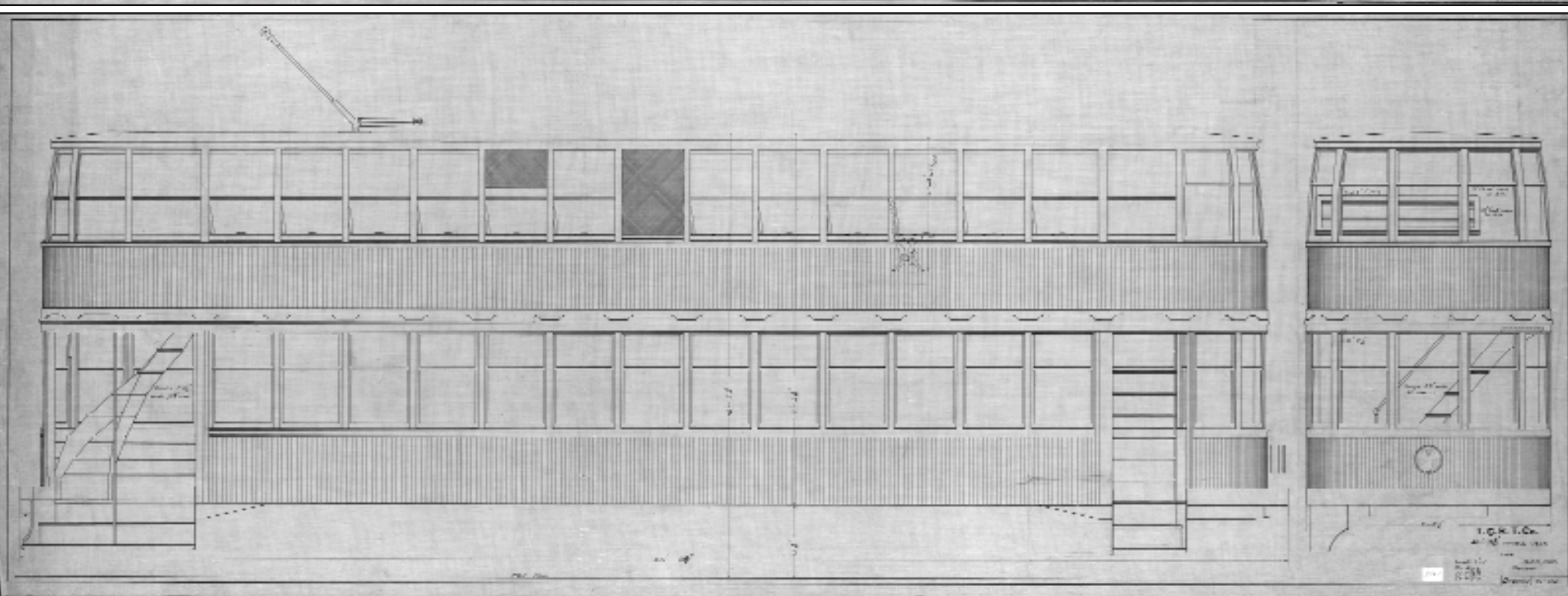
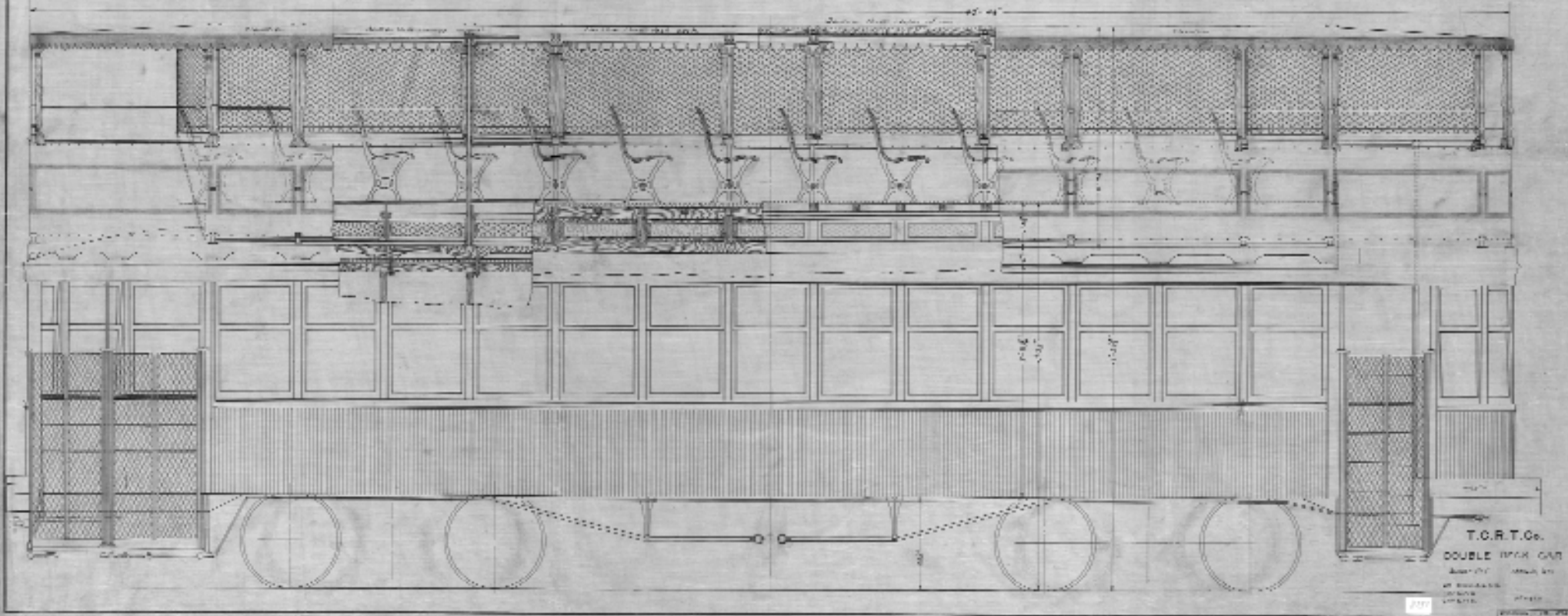
Head-on plan view of the never-built interurban. Note the coupler for multi-car trains and the train doors to permit movement between cars.







TCRT's interurban would have been five feet longer than a standard streetcar and seated 58 passengers. There was a toilet and what appears to be a separate washroom. Passenger could enter through both vestibules and could move between cars, although its unclear how many cars there would be in a train.



It's unclear why the interurban was never built. Instead, TCRT converted 19 city cars, #1145-1163, to high speed suburbans. This was part of a group that had been built with roofs reinforced to carry an upper deck. In fact, car #1145 was one of the three experimental double deckers, but the deck was removed after a short time. A final group of five 1907 vintage cars, #1255-1259, was upgraded to high speeds in 1914, bringing the total to 42 cars.

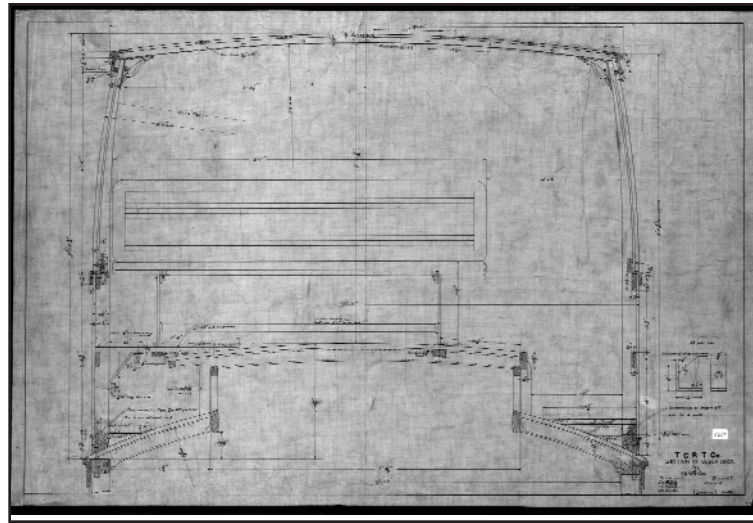
The double deckers

Even though TCRT experimented with three double deckers, it scrapped plans to build 50 of them, based on the experience with #1092 and #1145, so I wanted to include them in this article. Also, now that we have the actual plans for these cars, it would be a shame not to share them.

Car #1092 was built in 1904 with a removable open upper deck for Lake Minnetonka service. Access to the deck was via a front entrance door and a single stairway in the front vestibule. The car had several shortcomings—only 50 horsepower motors despite the heavier weight, an obsolete wood underframe and inadequate weather protection on the upper deck, and it was slow to load and unload.

Those problems were solved by the second experimental double decker, #1145, built in 1905. It had a steel underframe, larger 75 horsepower motors and a fully enclosed upper deck. It also had both front and rear stairways, for faster loading and unloading. For a short time, the upper deck from #1092 was transferred to #1160, a new car with a steel underframe.

Despite these improvements and several months of test operation, the decision was made to kill the double decker program. All three cars lost

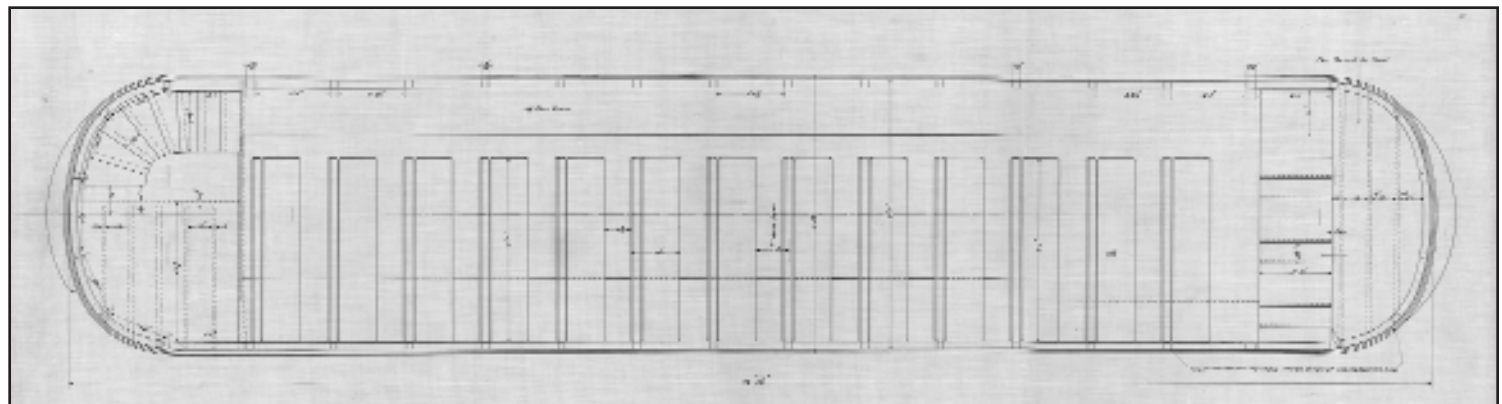
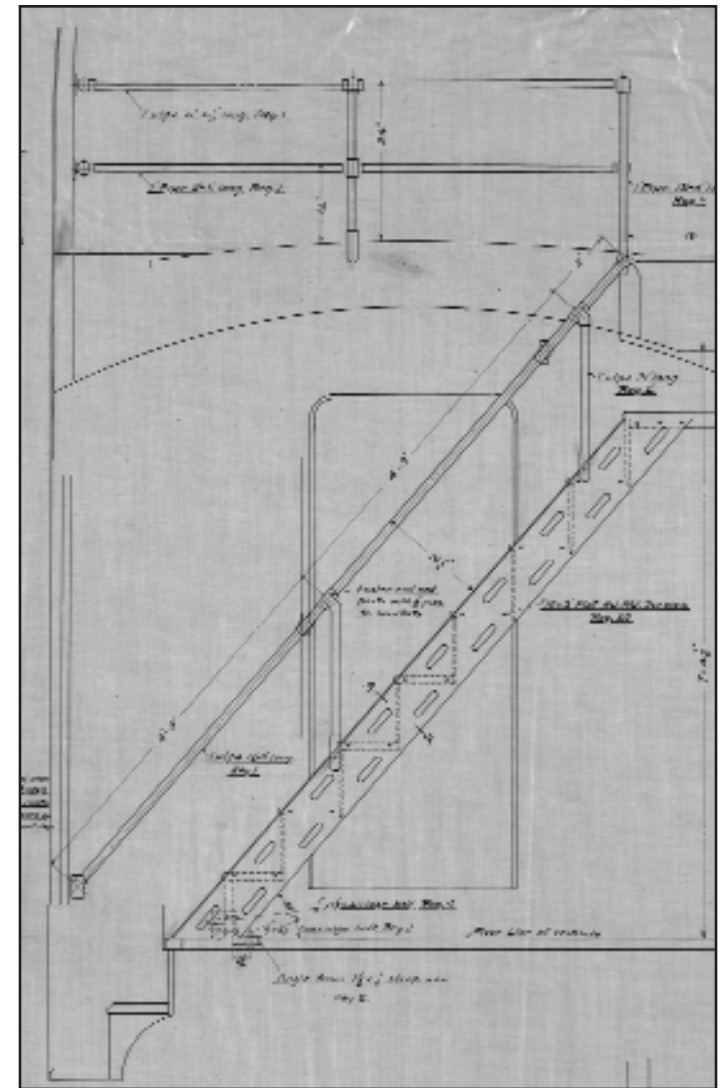


Opposite: The two double deckers that were actually built were #1092 (top) and #1145 (bottom).

Above: This view shows how the upper deck roof of #1145 was mounted atop the car's regular roof. It was designed to be removed in the winter.

Right: Detail of the #1145 front vestibule stairway.

Below: The upper deck floor plan for #1145 featured long wood benches, likely the same as used on the upper deck of the express boats.



One-man conversion

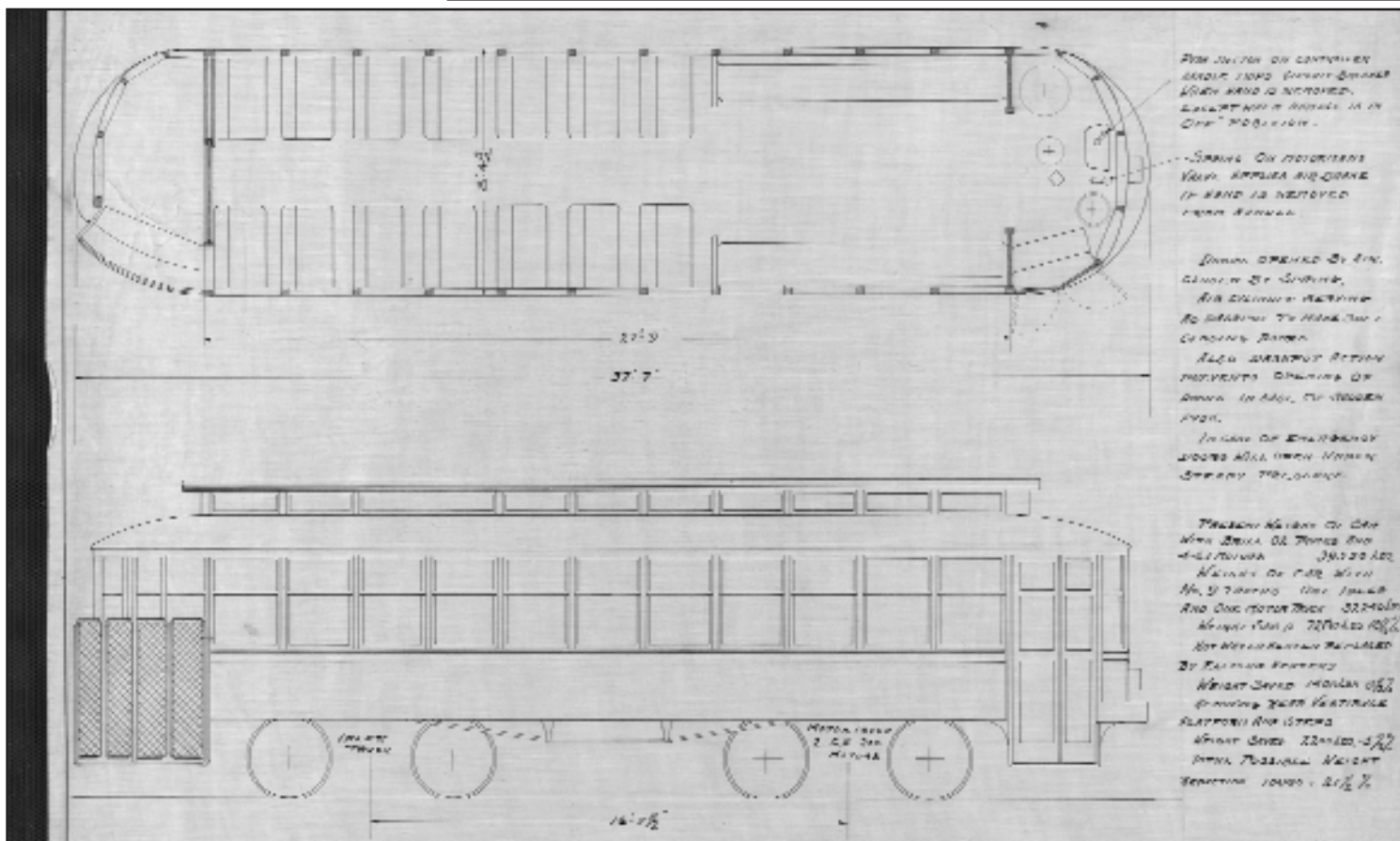
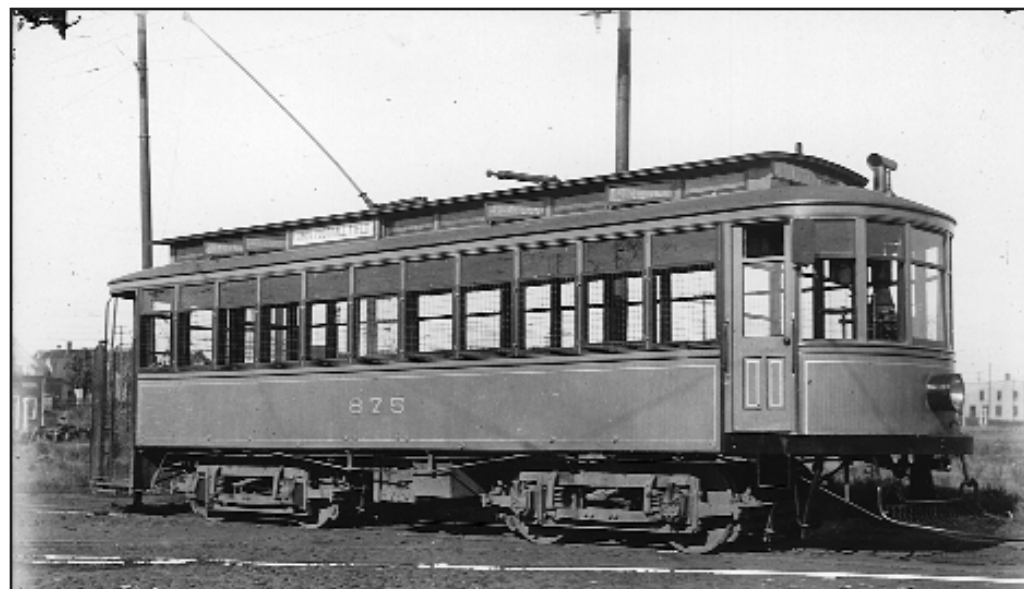
Lightly patronized lines were the logical place to begin a conversion to one-man operation. In 1901, TCRT had built a group of 32 shorter, 37-foot Class C cars for these very routes, so they were the logical candidates for conversion. TCRT drew plans for such a conversion in 1919. It never happened, at least to this group of cars. Perhaps the cities didn't permit it. In any case, TCRT didn't build a one-man car until 1925, and then it was a new lightweight, actually four of them, built for local service in Stillwater.

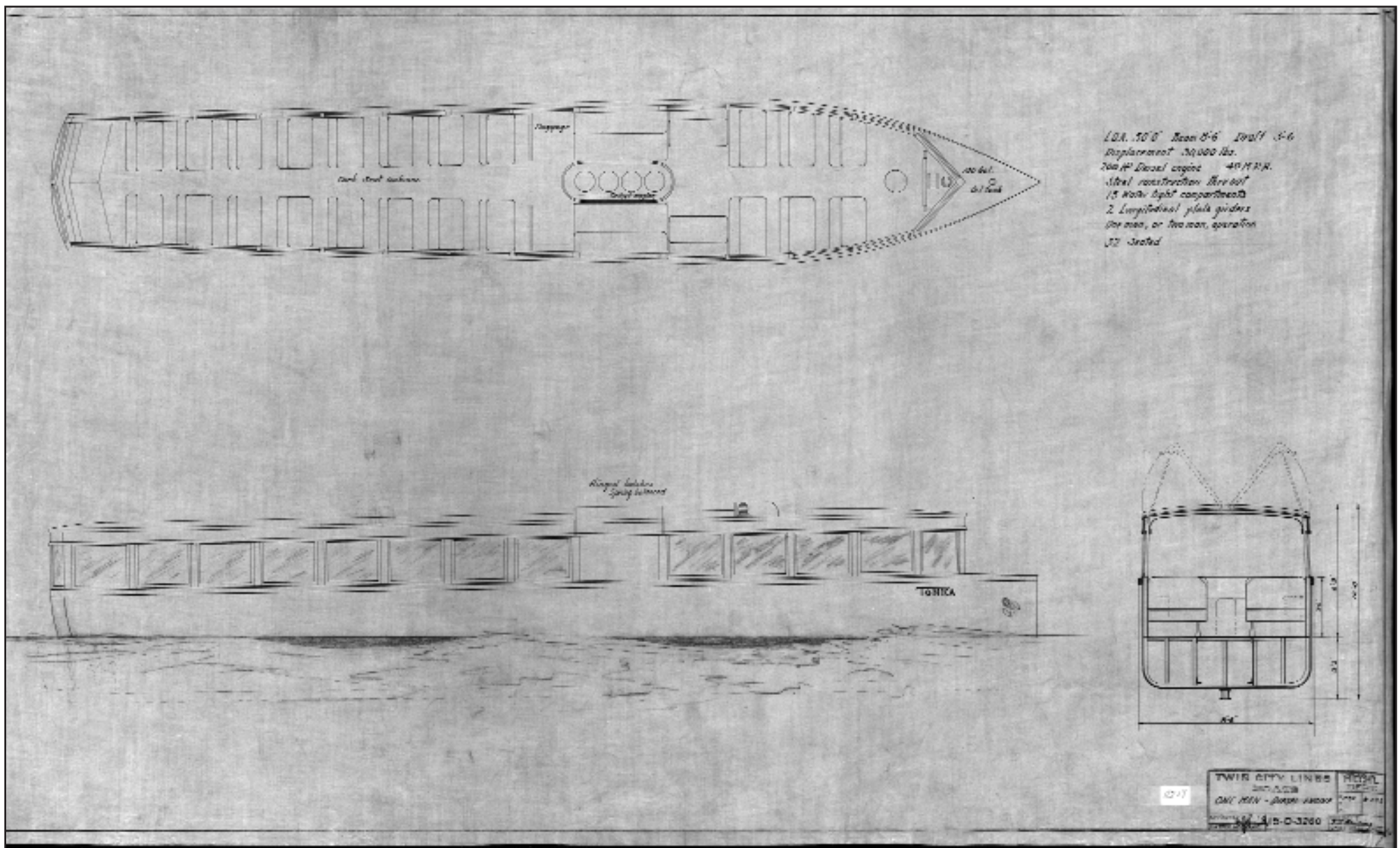
Gasoline lake boat

TCRT began reducing the Lake Minnetonka express boat service in 1922. Paved roads and autos were cutting into ridership. It appears that in 1923 the two lower lake routes from Excelsior to Wayzata and Minnetonka Beach were discontinued altogether, leaving only the two upper lake routes from Wildhurst to Spring Park and Zumbra Heights.

After 50 years of almost unbroken system and ridership expansion, it seems that TCRT management could not believe that the party was over, that the automobile would continue to marginalize public transportation until it could no longer turn a profit for a

Right: The short (37-foot) Class C-3 cars were designed with rear entrances for operation with a two-man crew. The one-man rebuild plan would have added a front entrance and shifted the longitudinal (aisle-facing) seats from the rear of the car to the front.





private company. So in 1925 TCRT designed a lake boat to replace the steam powered express boats. It would have had a gasoline engine and could be run by a crew of one or two, not three as on a steamboat. In addition, there would be no need to fire up the steam engine hours in advance or tend it through the night. Alas, it was too late. In 1926 the last express boats were retired.

The gasoline-powered, 32-seat express boat Tonka, intended to replace the steam driven streetcar boats.

The Split Rock Lighthouse Tramway

Minnesota had three cable powered incline railways. Most famous was Duluth's 7th Avenue W. incline that rose 500 feet from Superior Street on the west edge of downtown to 8th Street near the top of the ridge. It ran from 1891 to 1939. More obscure and shorter lived was the Duluth Belt Line

Railway that connected West Duluth with the unsuccessful Bay View Heights real estate development just east of Proctor and 600 feet above the lake. Opened in 1889, it lasted only until 1917.

The least well known of the three served Split Rock Lighthouse on lake Superior's rocky north shore. When Split Rock Lighthouse construction began in 1909, Highway 61 was still

The Split Rock tramway climbs the bluff from the dock at right to the hoist house at upper left. All historic photos Minnesota Historical Society collection.



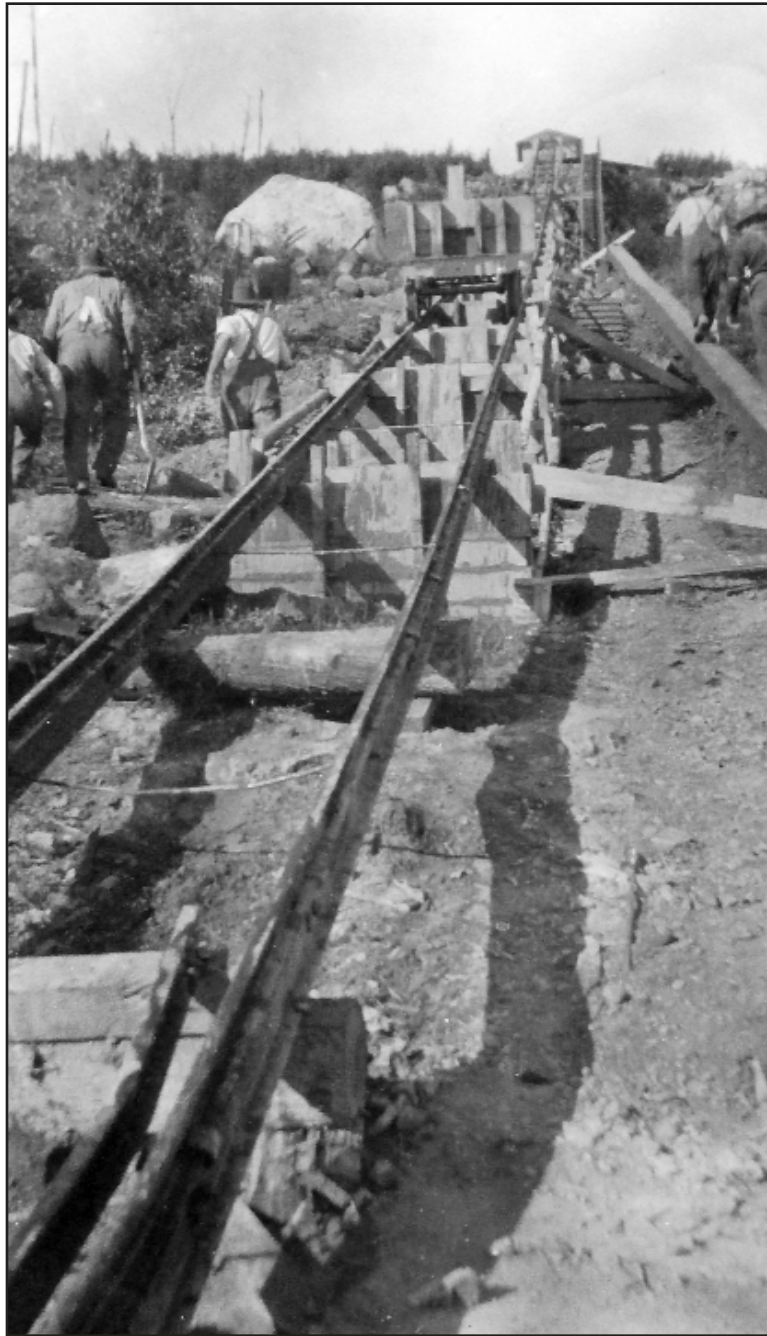
decades away. The only access was by boat. The lighthouse sits on a sheer rock cliff 130 feet above the lake. Even if a road from the lakeshore had been possible, it would have been extremely long and indirect to keep gradient manageable. A hoist and derrick was placed atop the cliff, and a set of 171 steps was constructed. However, this was inadequate as a long term solution. Instead, a cable powered incline tramway was built in 1916.

A straight shot from the lake to the lighthouse was not possible, so the tramway was built with a dogleg, in two distinct sections. One was cable powered, from a gasoline engine in a hoist house down to the lake. Once an upbound load reached the hoist house, the cable was detached and the car was pushed manually up a much more gentle slope to the lighthouse. The track ended in the street in front of the workers houses.

There was only a single open cart, its platform canted to keep the load level on its way up and down the steep section. The cable portion of the incline rode a wooden structure atop concrete piers that varied in height depending on the irregularities of the terrain. A wood walkway was laid between the rails with cross boards every couple of feet, creating a sort of stairway for walking the length of the line.

The tramway remained vital to lighthouse operations until 1924, when Highway 61 was completed. It was last used in 1934 and then removed. Today a wood stairway runs alongside the old tramway, where the concrete piers are still very much in evidence. Interpretive displays in the lighthouse tell the tramway's history.

Jim Vaitkunas visited Split Rock recently and documented the remnants of the incline, including the hoist house and concrete piers.



These two photos show the tramway construction in 1916. It rode a series of concrete piers.





Above: The hoist house, where a gasoline engine powered the tramway's cable.

Below: The base of the tramway, boat house and dock.



Above: Wash day at the boathouse. Note the cleats that turned the tramway into a walkway.

Below: At the hoist station, the tramway angled toward the houses.





From the hoist house to the top of the hill, the grade was much more gradual and the tram car was pushed manually. The track traveled down the short street between the residences.





The tramway hoist house and support pillars as they appear today. Jim Vaitkunas photos.



Miscellaneous TCRT ad art

Since the unofficial theme of this issue is drawings, let's conclude with a diverse sampling of TCRT advertising art down through the years.

Below: A newspaper ad from the late 1940s, as ridership was plummeting due to auto competition.

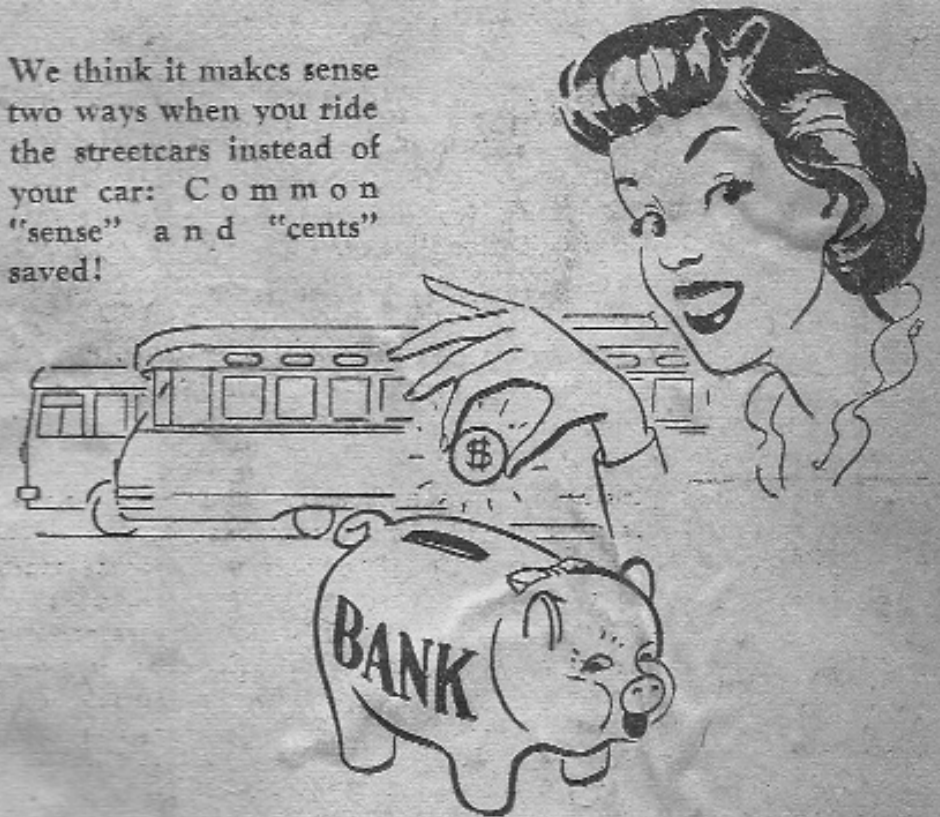
So, using these conservative figures, if you work five days a week, the streetcars and buses SAVE you at least:

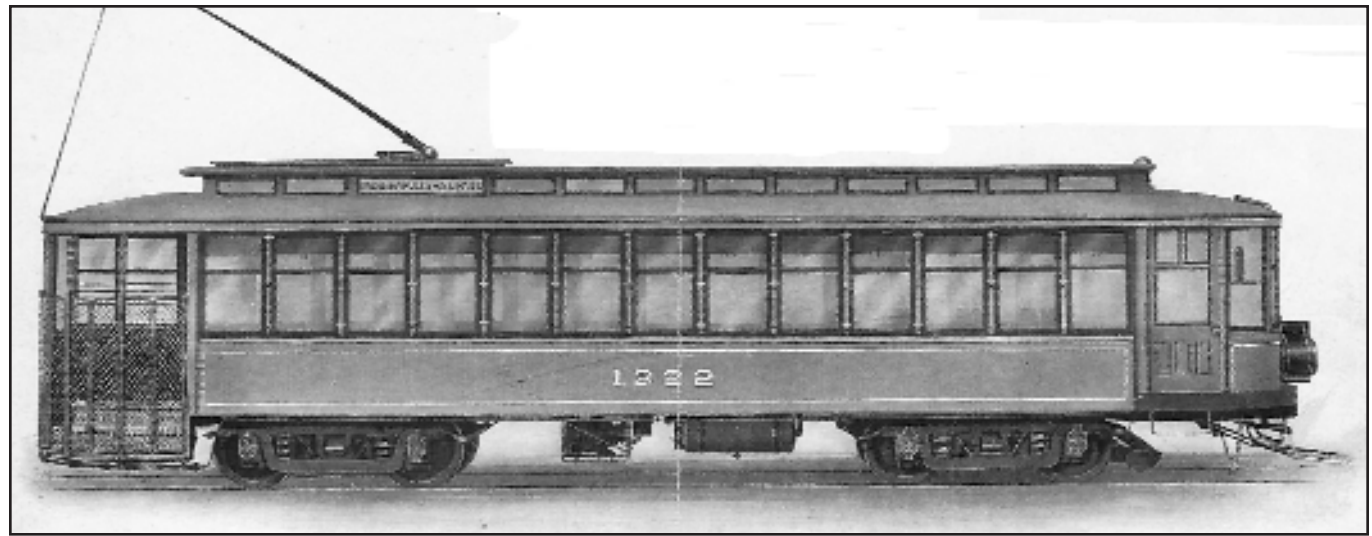
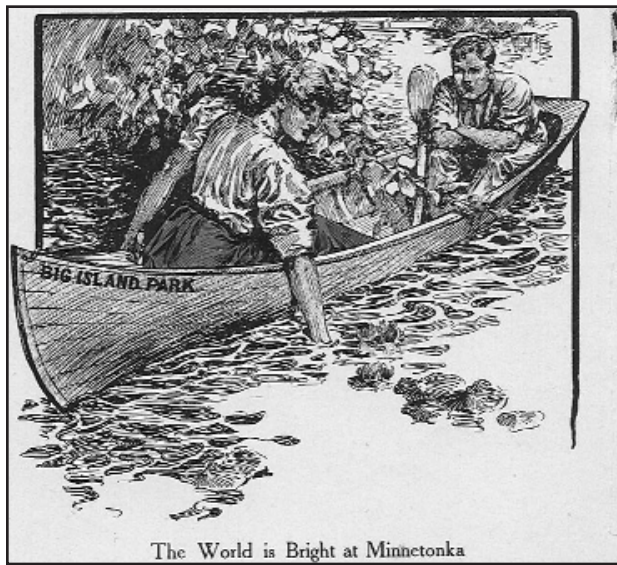
1.95 every week

8.45 every month

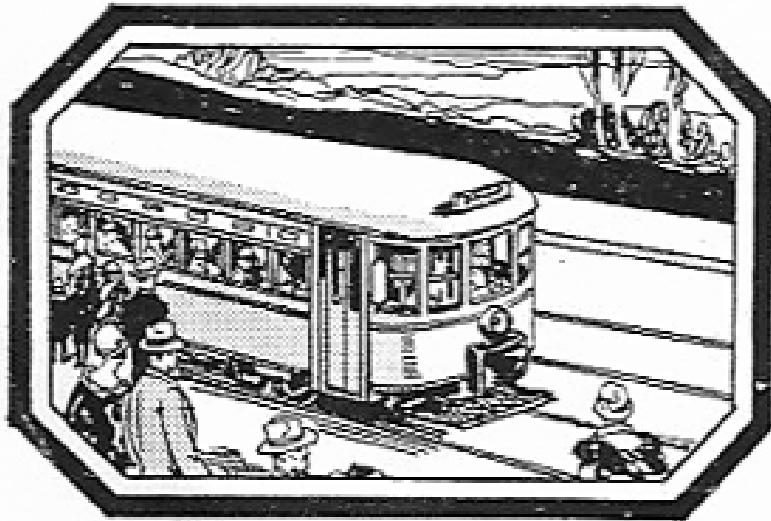
101.40 every year

We think it makes sense two ways when you ride the streetcars instead of your car: Common "sense" and "cents" saved!





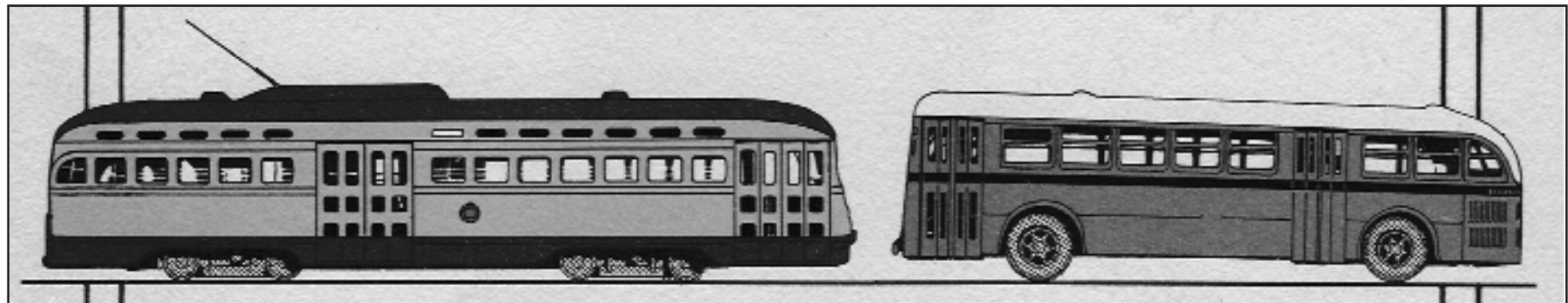
This streetcar graphic appeared every year in TCRT's Twin Cities tour brochure. Each year the car number changed to reflect the latest series built that year, and sometimes the destination sign changed.

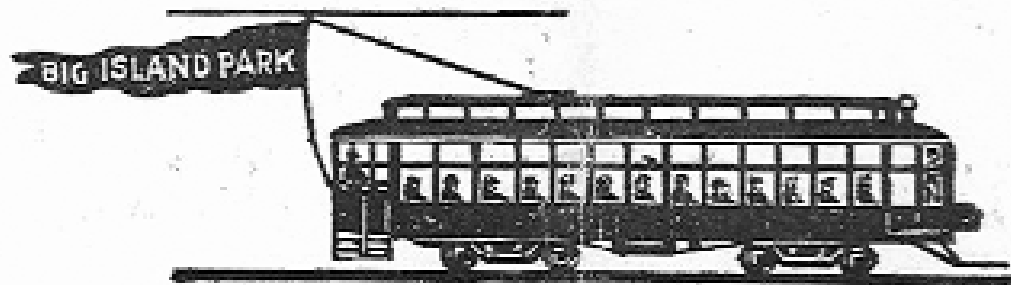


Letterhead from a piece of company stationery.

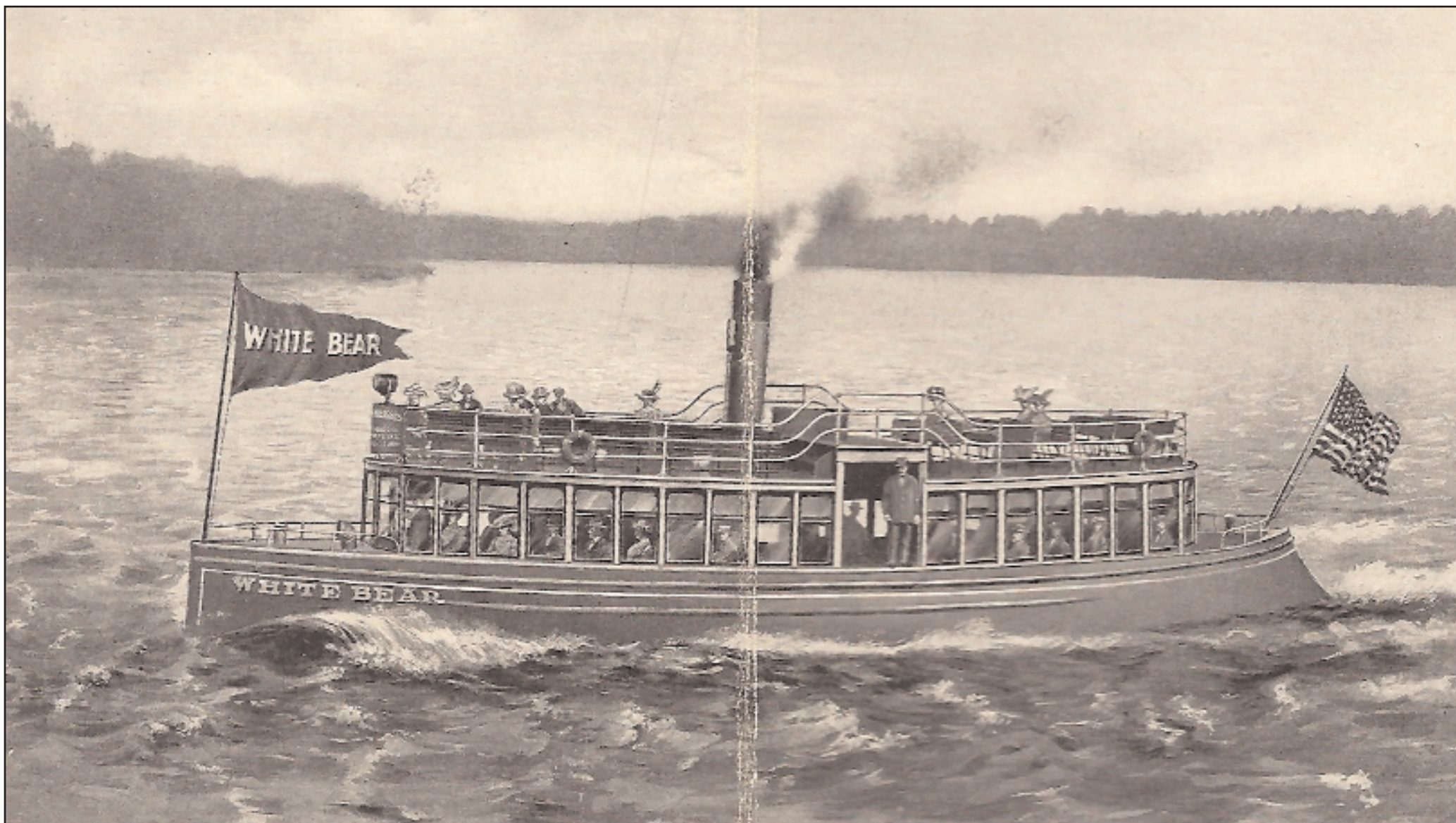


We can't reproduce it in the original color, but believe me, the yellow PCC and green bus are quite striking. Note that the bus is printed backwards, with the doors incorrectly on the left side.





Both of these images came from one of the TCRT's big pre-1910 brochures on how to see the Twin Cities by streetcar and boat.





MINNESOTA STREETCAR MUSEUM

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August 2021

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